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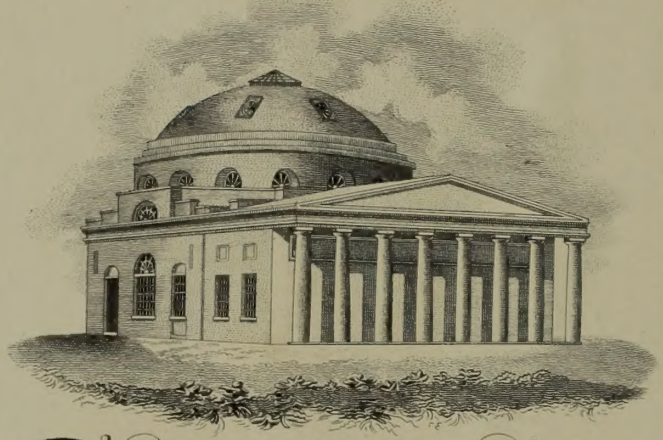

University of Maryland

University of Maryland Theses

Early Doctor of Medicine and Doctor of Physic Dissertations with Corrected Tables of Contents

These manuscripts described as either an Inaugural Dissertation or an Inaugural Essay were presented to the University of Maryland for the Degree of Doctor of Medicine and/or Doctor of Physic during the years 1813-1887. The individual dissertations were bound together during the 1940's. The original tables of contents for the bound volumes contained multiple errors in authors' names, titles, and/or years. To address these errors, an additional "Corrected Table of Contents" has been inserted at the beginning of each volume.

The project team who investigated and corrected the tables of contents were Richard J. Behles, Historical Librarian/Preservation Officer; María Milagros Pinkas, Metadata Management Librarian; Angela Cochrane and Carol Harling-Henry, Resources Division; Sarah Hovde, Abra Schnur and Megan Wolff, Services Division.

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UNIVERSITY OF MARYLAND

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HSHSL 2012 for the UM Digital Archive. Sources consulted for corrections: Original Dissertation; University of Maryland Medical Faculty, Matriculation List, 1851-1892; Cordell, Eugene F. "University of Maryland, 1807-1907" (New York : The Lewis Publishing Company, 1907), Volume 2.

UNIVERSITY OF MARYLAND

THESES

1868 (e)

Farmer, J. W.	Digestion	26p.
Pembroke, G. W.	The Heart (1)	20p.
Loewitt, Charles	Opium	27p.
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Zepp, Leonard	Pneumonia	24p.
Eichelbergh, C. D.	Scarlatina	13p.
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~~Botelar~~, George W.	Signs of Pregnancy	19p.
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Hollyday, John G.	The Tongue	37p.
Holbrook, Edward H.	Pneumonia	20p.
Troupe, S. C.	Dyspepsia	28p.
England, Frank F.	Diphtheria	28p.
~~Attela~~, Edward S.	Foetal Physiology	40p.
Farmer, J. A.	Pleurisy (3)	17p.

(1) Noteworthy title calligraphy

(2) Partially faded

(3) No title page

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AN

Inaugural Dissertation

ON

Digestion

Submitted to the Examination

OF THE

Provost, Regents and Faculty

OF

PHYSIC,

OF THE

UNIVERSITY OF MARYLAND,

FOR THE DEGREE OF

DOCTOR OF MEDICINE,

By

Jno. W. Farmer

Of

Dublin, Virginia

Session of 1867-68. 17

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Digestion.

The possession of a sound mind in a sound & Symmetrical body was esteemed, by the Ancients, to be one of the greatest blessings a man could enjoy. This is surely a great Truth; & it is really strange that mankind have not profited by it, & used every in their power to secure a healthy body: for the powers of the mind, even ness of temper, kindness of disposition, all

depend upon the state of our physical frames. The happiness of our race depends mainly upon a free & easy digestion. The common miseries of life which often weigh so heavily upon us are aggravated by impairment of the digestive functions, & life frequently rendered undesirable.

A knowledge of the circumstances upon which health depends is one of the most important parts of our moral

and physical education; and
noble indeed is the task of him
who lays open the fountains
of knowledge, on these subjects.
In looking over the biogra-
phies of great & long lived
men. we find that temperance
in eating was their first law.
Pythagoras, Newton, Franklin
& Wesley may be named as
examples.

Digestion is the
process by which our food

is reduced to a form in which it can be absorbed from the Alimentary canal. All Animals are sustained by this process. Vegetables are sustained by inorganic substances which need no modifications before they enter their systems. But it is not my object to speak of the digestion of Vegetables, or of the lower order of Animals, but of man, the noblest work of Creation. In order to un-

derstand the process clearly, we must first take a view of the anatomical structure of the organs of digestion.

The mouth is the cavity into which the food is first received. It is bounded on either side by the jawes, above by the palate, & contains the tongue & teeth. The pharynx is a musculo membranous canal, about four & a half inches in length, situated behind the nose and

mouth, & extends from the base of the skull to the cricoid cartilage in front, & to the 5th cervical vertebra behind. It has seven openings communicating with it, the two posterior nares; the two eustachian tubes, the mouth larynx & oesophagus. Extending from this along the front of the spine, through the posterior mediastinum is the oesophagus a muscular membranous canal, about 9 inches in length

It terminates at the cardiac orifice of the stomach, opposite to the ninth dorsal vertebra. The Stomach by far the largest division of the Alimentary Canal is also a musculo membranous organ with four coats, mucous, cellular, muscular & Serous. It has two orifices, the Cardiac & pyloric, the former at its junction with the oesophagus, & the latter at the beginning of the duodenum.

The intestinal canal is divided into the small & the large intestines. The small intestines are again divided into the duodenum, jejunum & ileum.

The duodenum as its name implies is equal in length, to the breadth of twelve fingers.

The jejunum embraces about 2/5ths of the rest of the small intestines & the ileum the remainder.

The large intestines, comprising the ascending, transverse and

descending Colon & Rectum ex-
tend from the termination of
the latter to the anus. The
Whole length of both the large
and small intestines is about
twenty five feet. They do not
differ materially, in structure,
from the Stomach.

Having briefly noticed the
anatomy of the Alimentary Canal,
we will now notice the
actions & those of its secretions
on the food. We take our

food in a solid, semi-solid or liquid form. Before treating of digestion we must classify food. Liebig looking at it from a chemical point of view divided it into nitrogenous or plastic elements, & hydro carbons or respiratory elements. He supposed that the first class, such as albumen & muscular flesh were the only elements which were assimilated & converted into tissue, & that the second class, such as the

Starches & Sugars & fats, were taken solely to be burned & expelled under the form of carbonic acid. But we know that this view was erroneous, & that the starches, sugars & fats, do enter into the composition of the tissues. Therefore we may divide the food into the inorganic the organic non nitrogenized, & organic nitrogenized. The inorganic substances are not digested, but enter the system & pass out unchanged.

In the mouth, the first division of the

alimentary canal, the food is crushed & divided by the teeth, & reduced to a condition adapted to the operation of its proper elements. In this operation it is thoroughly mixed with the secretion of the parotid sub-maxillary, sub lingual glands & of the follic of the buccal mucous membrane. The secretion of the parotid gland is clear watery & not viscid. The secretion of the submaxillary, clear watery & viscid, & the secretion of the sublingual colorless & very viscid. Each of these secretions is alkaline. Many

different theories have been advanced by Physiologists in regard to the purposes served by these fluids. Some assert that their action is purely mechanical, facilitating the movements of the tongue, keeping the mouth in a moist condition, lubricating the mass of food, fitting it for its passage through the oesophagus into the stomach. But in addition to this it has been shown that it has the power of converting starch into sugar. Its action however upon starchy

matters is very slight, for we generally swallow them too quick for it to affect them. According to Bidder & Schmidt the amount of Saliva secreted in twenty four hours is $3\frac{1}{2}$ lbs. There is much difficulty however, in making an aggregate estimate, as its flow is greatly influenced by mental emotion & the presence of food. The bolus (with only the starchy matters acted upon & that very feebly) is carried by the constrictor muscles of the pharynx into the oesophagus & by the contraction

of its longitudinal & circular fibres it is carried into the stomach. The alternate contraction & dilatation (churning) of the muscular fibres of the stomach, bring every particle of food into contact with the gastric juice. This juice is secreted by the tubular glands situated in the mucous membrane of the stomach. It is a clear, colorless, acid & slightly viscid fluid. The amount secreted in 24 hours is estimated by some Physiologists at thirty pounds.

The whole amount secreted, save about 20z, is reabsorbed.
Dr. Beaumont states that its flow is proportioned to the wants of the system & not as some authors state, to the amount of food taken. Various analyses of this juice have been made & different results obtained Phosphates, Hydrochlorates of Potash, Soda, lime, magnesia, acetic, & lactic acid are found in it.
Some Physiologists assert that its acidity is due to Hydrochloric

acid;- but the weight- of authority
is evidently in favor of the lactic
acid. Bernard has found by recent
& well contrived experiments
that- its acidity is certainly due
to lactic acid. It also contains
an organic matter called pepsine,
which acts Catalytically upon the
albumenoid substance, converting
it- into albumenose. Thus far
we have the starchy substances
acted upon, only to a feeble extent-
& the albumenoid substances converted

converted by the gastric juice into Albumen-
ose - The bolus is therefore a non-
homogenous mass, & passes in this
form into the small intestines
to be further acted upon & fitted
for assimilation. It was formerly
supposed that all parts of the
food were digested in the stom-
ach, but it is now understood
that only the nitrogenized sub-
stances are digested, & the fats
liquified -

The intestines contain three sets

of glands, Leiberkuhn's Brunner's & Peyer's. The first two alone secrete the true intestinal juice. The functions of the latter are not clearly understood. As the bolus passes into the small intestines, it meets with the mixed intestinal fluids & they digest the sugars & the starches. The exact composition of the intestinal juice has never been ascertained owing to the difficulty in collecting it unmixed with other fluids. The fluid secreted by

the Pancreas is similar in appearance to Saliva. It serves the purpose of reducing the oils & the fats to an emulsion, which is capable of finding its way into the lacteals. Bernard proved this by experimenting upon rabbits He found that the biliary duct opened below the pylorus, while the pancreatic duct opened six or eight inches lower down. He fed them upon oil, & upon killing them, found there was no chyle between

the two ducts, but that it im-
mediately below the pancreatic
duct. Therefore it is evident
that the pancreatic fluid
is the active agent in the
digestion of fat. Upon analysis
pancreatic juice was found to
contain Water 90.76. Pancreatine
90.38, Chloride of Sodium 7.36, &
traces of phosphate & Sulphate of
Soda, Sulphate of Potassa,
Lime, magnesia & Oxide of iron.
Thus far, nothing has been

said about the Bile. It is not a digestible fluid. It has no effect upon substances outside of the body; but its presence is essential to life. How this is, I know not. The Bile is a viscid, golden colored fluid secreted by the liver, the largest glandular organ in the body. According to Budder & Schmidt there are about two & a half pounds of this fluid secreted in twenty four

hours. It is composed of 788.00 water, Glycocholate & Taurocholate of Soda 90.00. Biliverdine, Fatty Oleates, Margarates & Stearates of Soda & Potassa & Cholesterine 13.72., Chloride of Sodium, Phosphate of Soda, lime magnesia Carbonate of Soda & Potassa 15.24. The most prominent of these are the Taurocholate & Glycocholate of Soda, which are formed exclusively in the liver, & do not exist preformed in the

blood. The Cholesteamie is a substance which results from the disintegration of the nerve tissue. It has been found in the Spleen & the brain. It is carried by the blood to the liver & discharged with the Bile, otherwise it would poison the blood. Much has been said about the function of the Bile. It appears that it serves three very important functions. 1st it pro-

Motis absorption of fatty matters,
acts as an antiputrefactive
agent, & excretes the Choles-
terine, which is poisonous.
The test for the coloring
matter of the Bile, is Nitric
acid; for the Tauro cholate
& Glyko cholate of Soda, a solution
of Cane Sugar & Sulphuric
acid. Add a drop of a
solution of cane sugar to the
fluid which is thought to con-
tain bile, then add Sulphuric

acid. There is first a white precipitate, but upon adding an excess of sulphuric acid, it turns to the consistence of syrup & is opalescent. Then a red color begins to show itself, & then a deep red, or gay ie, purple color, which indicates the presence of Bile.

AN

Inaugural Dissertation

ON

A Wart.

Submitted to the Examination

OF THE

Provost, Regents and Faculty

OF

PHYSIC,

OF THE

UNIVERSITY OF MARYLAND,

FOR THE DEGREE OF

DOCTOR OF MEDICINE,

By

George W. Gimbrede.

Of

Maryland.

Session of 186[illegible]

An

(Inaugural Dissertation)

on

The Heart.

Submitted to the Examination

of the

Provost, Regents and Faculty,

of

PHYSIC,

of the

University of Maryland,

For The Degree of

Doctor of Medicine,

BY

G. W. Pembroke,

of

Maryland.

Session 1867 & 8.

The Heart

The Heart, the great centre of the circulation, is a hollow muscular organ, situated in the thorax between the two lobes of the lungs, resting on the diaphragm and enclosed in its fibro-serous sac, the pericardium. It is divided into two great divisions, having no direct communication with each other, in the adult, by a muscular Septum and called according to their position, the right and left heart. Each of these divisions are again subdivided into two Cavities. One for receiving the blood

called the auricles. the other for impelling it onward in its course. the ventricles. these are here again named from their position right and left auricles and right and left ventricles.

The auricle on the right side receives the blood from the two venae cavae and the coronary vein. which being assisted by a very slight contraction of the auricle, flows directly into the right ventricle through the auriculo ventricular opening: this opening is provided with a valve, called tricuspid. from being made up

of three cavities - The right ventricle being filled with blood, contracts. the tricuspid valves close, preventing the blood from returning to the auricle. by this means it is forced to enter the pulmonary artery. the opening of which is also provided with 3 valves. which are closed by the blood insinuating itself behind them in the sinuses of Valsalva. thus cutting off its own return - The blood being thus prevented from returning into the ventricles. is forced onward into the lungs. and

there being aerated. returns to
the left auricles by the four pul-
monary veins. From the left-au-
ricles. the blood passes through
the auriculo-ventricular opening,
guarded by the mitral valves,
into the left ventricle; the
ventricle contracting. the blood
is forced through the aortic
opening. its return to the ventri-
cle being prevented by the
aortic or Sigmoid valves. which
are closed in the same man-
ner as those of the pulmonary
artery. Through the Aorta the
blood is distributed through-

out the system, supplying the tissues with its nutrient material. returning through the veins, and is emptied into the right auricle & begin its round again -

The passage of the blood through the heart, is not a steady flow, but is accomplished by the alternate contraction and relaxation of its muscular walls so that at each relaxation or diastole of the heart successive portions are received from the veins and propelled onward when the organ contracts, which constitutes its Systole -

This alternate contraction and relaxation following each other in regular succession, with a short period of rest between the diastole and the beginning of the systole constitutes the rhythm of the heart. The cause of this rhythm but little seems to be understood, physiologists differing in their explanations. According to Kirk it is connected with the existence of numerous minute ganglia of the sympathetic system in the substance of the heart, connected by nerve fibres which

unite them and enables them to act in concert. Carpenter supposes it due to the stimulus of the venous blood received from the venae cavae Dr. Cabell of the University of Virginia, taught that it was owing to the blood in the coronary vessels after becoming venous stimulates it to contract. The contraction forcing the blood out of the veins from the substance of the organ. The stimulus being removed the heart relaxes permitting the blood to enter these vessels

again, which undergoing the same changes as before, keeps up the alternate contraction and relaxation -

Our distinguished Prof. of Physiology, Dr. Donaldson, includes three elements in its production, all of which are necessary - a certain amount of nervous influence - the proper kind of blood in each side of the heart - venous in the right side arterial in the left - and the proper nutrition of the organ

Connected with the rhythm of

[illegible] and sounds- During the Systole, the apex of the heart is rotated forwards and to the left, striking against the anterior wall of the thorax, the ventricles at the same time shortening, this Rotation arises to the [illegible] of the [illegible] of the apex of the heart against the parietes of the chest- which produces the impulse or shock, usually felt in the 5th intercostal space, half way between a line drawn [illegible] the left nipple and the middle of the sternum

num. though this point varies with the position of the body and is sometimes not felt at all, owing to the thickness of the intervening wall, or from feebleness of heart's action — it may also be augmented by hypertrophy or by anything which increases its action —

The sounds of the heart are two with every pulsation, followed by a very short interval of repose. The first sound is heard during the system of the heart and is synchronous with the pulsations in the large arteries

but anticipating, by a very minute
interval, the pulsation in the
[illegible]ities — it is of a dull
[illegible] character longer than
that of the second, and is best
heard over that part of the chest
which is in contact with the
ventricles indicated by dullness
on percussion — a region of about
two inches in diameter of a
rather triangular shape, the base
being directed upwards and
to the right the apex downwards
and to the left this region
encroaching on the left side
Many bruits were [illegible]

in regard to the cause of the first sound of the heart: but it is now generally conceded to be due to three elements — viz: muscular contraction of the organ — closure of the auriculo ventricular valves and the impulse —

The second sound occurs during the diastole of the ventricles — it is of a quick short and clear character — due entirely to the flapping back of the semilunar valves — and best heard over the sternum opposite the lower margin of the third costo sternal articulation —

The whole period which elapses

from the beginning of one sound
to a similar [illegible]
the beginning of [illegible]
in the next is a little more
than a second, and, according
to Prof. Donaldson, dividing this
time into 10, the first sound
would occupy 4/10, the second
3/10 leaving 3/10 for the period
of rest.

We will now consider the abnor-
mal sounds or murmurs which
occur in various morbid conditions
of this organ or the blood itself
The organic murmurs or those
which result from changes in the
structure of heart, are divided

from their seat and cause into constricted and regurgitant murmurs; the first by blood passing through a preternaturally small orifice into a larger space, which spreading into streams and striking against the walls of the vessels and each other, produce the sounds by friction –

The second, or regurgitant murmur, is from imperfect closure of the valves allowing the blood to flow back and against the onward current of blood. The inorganic murmurs in those the cause of which, is in the blood itself accurs [illegible]

erally in Anaemia without heart-disease and often extend into the arteries - It is by the concurrent signs and symptoms that they are distinguished from those caused by organic disease - They are more variable and not much increased by moderate exercise

Although a moderate degree of valvular disease may exist without any serious results, yet they continue to increase, giving rise to serious and fatal consequences, the most common of which are [illegible] congestion [illegible] - general [illegible] -

We now propose to consider the physical signs of valvular trouble as before stated the organic murmurs may be caused by a constriction of some the orifices of the heart - or by imperfect closure of some of its valves - a constriction at the aortic orifice will give a murmur with the first sound of the heart; as also will a constriction of the orifice of the pulmonary artery - distinguished from each other by their position the aortic murmur being best heard over the third intercostal space, immediately below the lower border of the third rib at its junc-

tion with the sternum, on the right side. Murmurs at the pulmonary orifices being heard in the third intercostal space on the left side. A regurgitant murmur will be heard with the second sound of the heart. A contraction of these valves will also produce a double sound during the systole — the blood being [illegible] in passing through the lessened orifice. The valve does not fall back synchronous with those of the other side. A regurgitant murmur occurs during the diastole.

Murmurs from 'Contraction of

the auriculo ventricular openings are presystolic caused by the passage of the blood from the auricles into the ventricles. A murmur from imperfect closure of the auriculoventricular valves occurs with the first sound of the heart. If occurring at the mitral orifice its point of maximum intensity will be at the apex of the heart, in the fifth intercostal space. If its point of maximum intensity indicates that the trouble is at the tricuspid orifice it will be best heard over the middle of the sternum nearly in a line drawn across from the apex.

Thus to sum up; a murmur
with the first sound of the
heart - aortic or pulmonary
constriction; or, tricuspid or
mitral regurgitation - A murmur
with the second sound caused
by aortic or pulmonary regur-
gitation a presystolic murmur
auriculoventricular constriction.
The physical signs of hypertrophy
are a greater extent of dullness
the region of dullness retaining
its relative form - In pericar-
dial effusion the dulness is
increased in extent but the
greatest breadth of this region
is at the apex whereas in

in hypertrophy [illegible] [illegible] [illegible] – The impulse is generally, also, much stronger in hypertrophy which serves to distinguish it from dilation: the impulse, in this case, being feebler where the region of dullness is increased in extent – as in hypertrophy –

AN

Inaugural Dissertation

ON

Opium.

Submitted to the Examination

OF THE

Provost, Regents and Faculty

OF

PHYSIC,

OF THE

UNIVERSITY OF MARYLAND,

FOR THE DEGREE OF

DOCTOR OF MEDICINE,

By

Charles Lovett

Of

Maryland.

Session of 1868

Opium is undeniably the most valuable Narcotic agent in the Materia Medica, and although it has been much abused and misused as all other remedies have, and in fact as all of Gods best gifts to Man have been, yet it has long held and still maintains a pre-eminence over all other known medicines with which we are acquainted, and I think the fact that it is more frequently resorted to than any other agent, bears me out in my assertion. Numberless are the instances in which it has been instrumental in the hands of the Physician, (always under Divine power), of guiding his patient safely through a deadly disease, and once again restoring him to life and health. and numerous are the instances in which, when all hope for the preservation of life, had fled - its

its wonderful, pain-assuaging powers have been invoked to cheer the last moments of many thousands of those that reach the same and ... the ... of man, and although unable to check the ebbing tide of life, art has enabled him to glide calmly and quietly to his final resting place, undisturbed by the terrible struggles ~~and~~ attendant upon so many of the "ills that man is heir to".

Opium is the juice extracted from the capsules of the Poppy which is quite commonly cultivated as a flower in our American gardens.

The manner of extracting Opium from the poppy is the same as that which was practiced by the ancient Greeks eighteen hundred years ago, and is as follows: After the fall of the flowers, and when the pods are green and succulent they are incised with a knife, or instrument prepared for the purpose, and al-

lowed to remain in this condition for twenty four hours at the expiration of this time the juice is found expuded from the capsules and adheres to them in the shape of tears, which are scraped off with a blunt knife: a portion of the bark is also scraped off which amounts to about one fourth of the whole: it is then placed in earthen vessels and well beaten: After it is thought to be sufficiently consistent, it is wrapped in leaves and sent into the market. There is also another mode of making Opium; After the pods which have been incised have ceased to expude, they are gathered, and water being added to them, they are violently beaten: the liquid thus obtained, is boiled down to a proper consistency, and constitutes Opium.

Opium is found in lumps of irregular size and shape, generally flattened; of a dark color on the surface, and of a reddish brown within, and is very compact.

The odor of Opium though hard to describe is narcotic.
The taste of Opium is intensely bitter and slightly acrid, and is very irritating, frequently blistering the mouths of persons unaccustomed to chewing it.
When broken it leaves a shining fracture, except when it is soft within, but it soon hardens after exposure to the air.
When Opium is pulverized the powder is of a yellowish brown color, and will burn if a flame of fire be applied to it.
It yields its qualities to water, vinegar and alcohol and the liquid is of a very dark brown color.
Turkey Opium, which is the best variety, is also sometimes called Smyrna and Levant. It is found in much larger lumps than the other varieties; its lumps weighing from one to two and a half pounds while the others usually weigh from a quarter to one pound.

Turkey Opium comes in lumps which are almost round and the edges are indented by pressure: Egyptian Opium comes in flat circular cakes.

Turkey Opium is covered with the pods of the Poppy, and frequently has the leaves of the Plant sprinkled over it. When fresh it is of a dark brown color but is soon blackened by exposure to the air. When broken it is found to be tenacious in the interior, and little shining Tears are disclosed to view which are not found in any other variety. Egyptian Opium is hard, and dry, and of a pale brown color, and the odor is much the same as that of Turkey Opium It is easily broken and in the interior it is of a waxy lustre. It is greatly inferior to Turkey Opium, and only yields six or seven per cent of Morphia. Some of the pieces when exposed to the air become damp and sticky, which indicates that it has been adulterated by some article of a deliquescent nature.

Opium has been found to contain a great number of chemical principles, of which Morphia, or Morphium as it was called by its discoverer Sertumer, in Hanover, in 1817 is the most important. It is a vegetable alkaloid and contains the narcotic powers which Opium possesses. Sertumer also discovered an acid which he called Meconic. Opium has been adulterated to an enormous extent; some writer, speaking of this fact, says it is made over again, at Marseilles, and enumerates a long list of the impurities which are added to it. Some of them are ashes, sand grapes, and even cows dung; so that by the time it arrives in this country, it consists of about one fourth of dirt. The many tests given for Opium are considered to be very unreliable. It is stated that if Chlorine water or Chlorinated Soda be added to Morphia it will change it to an orange color; also that it will become of a fine blue color, on the addition of the Perchloride of Iron.

Perchloride of Gold added to Morphia produces a yellow precipitate, which changes to a bluish and then violet color. If Morphia be added to a solution of Iodic Acid it decomposes it and sets Iodine free.

There are several salts of Morphia, but the most valuable of all is the Sulphate which would be sufficient for all the purposes to which Morphia is applied, but it is sometimes incompatible with medicines which have to be administered at the same time.

The Acetate of Morph. is the least valuable of the salts and is apt to undergo decomposition when kept, which can easily be discovered by its sour smell.

Codeia is the next chemical principle of importance to Morph. but is of so much less value that it is scarcely noticed by writers on Materia Medica.

Another chemical principle of Opium is Narcotina, but it is not believed to contain any of the valuable properties of Opium

It is certain that there is no standard by which we can judge of the purity of Opium, and the only way in which a Druggist can judge of its quality; is by analyzing it or noting its visible properties: Good Opium when drawn across paper will leave an interrupted mark - bad Opium a continuous one. The fetor of its taste, and the strength of its odor are also to be observed, and if all these indications are favorable, and there are no visible impurities, we can suppose it to be good.

There is quite a variety of the preparations of Opium, and most of them are of importance, and are used on different occasions, for sometimes a patient can not take one, or it may be injurious to him, while another would not. Tinctura Opii or Laudanum is the first preparation I shall mention and it is probably more frequently employed than any other; It is prepared by steeping two and a half ounces of Opium in two pints of Alcohol.

It is an important fact that Laudanum becomes stronger the longer it is kept. and this should be remembered for a non attention to it has in several instances produced a fatal result.

The ordinary dose of Laudanum is from thirteen to twenty five Minims but in some cases as for instance in Delirium Tremens and Tetanic convulsions. it is necessary to administer it in doses twice as large. I myself witnessed an instance of Delirium Tremens in which from forty to fifty minims was administered with scarcely any effect every half hour.

Laudanum is probably more used in domestic practice than any other medicine. it is to be found in almost every house and is regarded by common people as the great Panacea for all earthly

pains and diseases.
It is most certainly the most popular therapeutic agent employed in the Healing Art.
It is also more used by the Suicide to accomplish his criminal desire, than any other agent, probably from the fact that it is more readily obtained.
Acetum Opii or Black drop is I believe the strongest of all the preparations of Opium.
It is obtained by steeping Opium in diluted Acetic Acid with the addition of Sugar, saffron, and Nutmegs.
Black drop is very valuable in cases where Laudanum produces nausea and headache, it possessing all the narcotic and anodyne effects of that preparation without causing any disagreeable after effects.

The dose of Black drop is from seven to ten minims.

Pills of Opium are made with one grain of Opium and enough soap to make them consistent.

Paregoric is a very mild preparation of Opium which is most used in treating infants and children; it is very useful in hooping cough and asthma, and relieves pains in the bowels, also it checks Diarrhoea.

The dose of Paregoric is from five to twenty drops for children, and for adults from one to two fluidrachms.

Vinum Opii is prepared by steeping Opium in Wine and then adding some of the aromatics; it is almost the same as Laudanum.

The dose of Vinum Opii is from about ten to twenty five minims.

The Water Solution of Opium is extremely useful in many local diseases as for instance in Rheumatism Erysipelas, Irritable Ulcers &c.

Opium can be administered in several ways although it is more frequently given by the mouth but sometimes when persons have for a very long period been accustomed to its use it loses its effect, and it is then advisable to administer it in the form of an enema, which requires about double the quantity taken by the ordinary receptacle - the Stomach.

It can also be employed endermically, but there is attendant with some danger, and death has been produced by applying a cataplasm containing Laudanum to the Epigastrium and allowing it to remain too long.

The Hypodermic method of employing Opium is invaluable; although a recent discovery its great usefulness is universally acknowledged by the Medical Profession and no Physician should practice without a Hypodermic Syringe, for Opium applied in this way immediately to the seat of pain acts like magic.
The preparation used for Hypodermic injection is a solution of Morphia.

The effects of Opium are various and very interesting; on the invertebrate animals it produces no effect at all but if given to the lower vertebrate animals it produces convulsions and death.

The primary effects of a moderate dose of Opium upon a person in good health are these -

Great stimulation of the brain and increase in the power of the pulse: the senses become unusually acute and active, and the mental capacities are greatly exalted.

If no more opium be given, this state of affairs soon becomes changed: the excitement declines and a wonderful calmness of mind ensues: the person feels entirely free from care and allows his mind to run into a train of the most delightful and vivid fancies.

After a certain length of time this state of enjoyment gives place to sleep which lasts for some time, and on awakening the person experiences all the disagreeable sensations with which drunkards are familiar, and from which they suffer the following morning after a night's carousal.

In the East Opium is smoked by the natives for the sake of the delightful sensations it produces and its effects are truly terrible. Thousands are brought to an untimely end by this accursed practice.

The miserable victims of this degrading habit can easily be recognised by their sallow, cadaverous appearance, and by their excessive tremulousness: they also suffer intensely gripping pains in their bowels.

It is a deplorable fact that the horrors of Opium eating are not confined to the East. Over three hundred thousand pounds are consumed yearly in this country, and not one tenth of this amount is prescribed by Physicians.

It is smoked by the Mohammedans and Hindoos as a substitute for Alcohol, but in America where the wide spread practice of getting drunk is so frequently exercised it is hard to imagine any cause for its enormous consumption. A great many persons most unfortunately acquire the practice, from using it too frequently to allay the pains caused by disease.
Last winter I noticed particularly a young man in one of the wards at the Infirmary who had become addicted to this baneful habit by his having too freely made use of Opium to relieve the pains he had suffered with Rheumatism. His appearance corresponded precisely with that of the Opium Eaters described by visitors to the East.

Opium is used to check excessive discharges and also secretions.

It is valuable in Diarrhoea and if given in the first stage of this disease is an almost certain cure.

Opium is frequently a compound in prescriptions which contain ingredients that are apt to promote the evacuations and when this is not desired, for example - it is often given with calomel to prevent it from acting on the bowels.

It is useful also in Diabetes, which is an excessive secretion of urine, and in fact it is useful in lessining all of the secretions except those of the skin: it being a powerful Diaphoretic.

Opium is given to control hemorrhages and is also prescribed after the hemorrhage has been checked.

Opium is one of the most useful remedies that can be employed in the treatment of Delirium Tremens. for in that disease the ~~the~~ great point is to procure sleep. which Opium above all other medicines possesses the power of producing.

Opium is valuable in Tetanus for in this disease the muscles being powerfully contracted. it acts by virtue of its antispasmodic properties — relaxing them.

Before the discovery of Peruvian bark Opium was one of the chief remedies in the treatment of intermittent fevers. it is now some-

times given in the first stage of that disease, to palliate the headache and nausea accompanying it, and it is even said that it can be beneficially applied - after the fever has come on, but how it acts I am unable to say. Opium is always given in every case in which it is desired to produce sleep, when there is nothing to contraindicate its employment. but sometimes the diagnosis is very difficult for example in Typhus fever. there is a stage attended with muttering delirium, hiccough, great insensibility of the surface. If these symptoms are not soon checked, the patient must die - now if we are certain that cerebral inflammation exists, Opium should not be given but if we can not tell whether it exists or not, and the patient will perhaps die any-

how, we should begin by giving a very small dose at first and if it is of any benefit continue it, but if the contrary of course it is to be abandoned.

Opium is said to be beneficial in eruptive fevers just before the eruption breaks out, and it is particularly recommended in measles in which disease the danger is always greatest just before the breaking out of the eruption.

Opium is very good in unnatural excitement of any of the organs, for instance St. Vitis dance, functional excitement of the stomach &c.

Opium is much used to prevent abortion. Abortions have a tendency to occur periodically, and they can generally be prevented

by the use of Opium, aided by the recumbent posture and proper diet.

Opium is more used than any other medicine to relieve pain.

It is serviceable in Nervous headache, unattended by cerebral congestion and derangement of the digestive organs.

Opium is much relied on in the treatment of Cholera.

In the Summer of 1866, when the Cholera was raging in this country, I had occasion - or I should say the opportunity of witnessing the treatment, of the most prominent Physicians in St Louis, in this terrible disease, and I found that their chief reliance was Opium, in one form - or another.

I might go on indefinitely, enumerating a long list of diseases in which Opium would be applicable and beneficial, I think that no other medicine is half so frequently employed in practice, and its aid is almost as frequently invoked by the Surgeon, who uses it both as a local application and internally; and it is very frequently given after an operation has been performed, to assuage pain, and to allow the patient, an opportunity of recuperating his diminished strength by producing refreshing sleep.

Notwithstanding the great applicability of this valuable agent to divers diseases it is not to be supposed that it can be administered indiscriminately, with the idea that it can do no harm and may do good, for there are many diseases in which if given it would

most certainly do great harm and probably prove fatal. for example no Physician would prescribe Opium in a case of Apoplexy, or of Congestion of the brain, nor in a condition of great inflammatory epitement.

Opium has been found useful in all diseases of the liver except in the passage of a gall stone.

It has been satisfactorily demonstrated that Opium produces its effects by absorption, and a proof of this is - that it can be detected in the breath, and also that it has been known to narcotize infants through their mothers milk, and to whom it had been previously administered.

There are some who contend that it exercises its effects by the nerves, but even if this be true

It must first be absorbed before it can arrive at the nerves.

Opium is one of the most dangerous poisons when taken in large doses.

It is sometimes taken in over doses by mistake, but more frequently, it is employed by the Suicide.

Unless speedy relief be afforded, it completely overwhelms all the powers of life.

It generally happens that a Physician is not called in to a case of poisoning until considerable time has elapsed after its administration, which increases the difficulty in the treatment.

When he does arrive he is generally told that about an hour after taking something, the patient was excitable, then drow-

by, and at last fall into a stupor.
The Physician finds that he is breathing very slowly, with loud snoring; his pulse much below the normal standard; pupils very much contracted, and his body bathed in a cold clammy sweat, his countenance wearing a dark and vacant expression, and the characteristic odor of Opium can be perceived by smelling the sheets wet with the perspiration, and also the breath, which renders the diagnosis easy and conclusive.
The first thing to be done is to give an emetic, either the Sulph. of Zinc or Ipecac; to tickle the fauces with a feather, and dash cold water on the head. Should the patient be unable to swallow an emetic, a stomach pump if attainable should be employed, and

water pumped in and out of the stomach.
Whenever he can swallow it - give strong coffee
which is well known to produce wakefulness
and is a good stimulant which he will re-
quire to enable him to overcome the depress-
ing effects of the poison.
There have been several seemingly hopeless
cases saved by the galvanic battery, which
should be applied to the back of the neck
and the stomach, and the electric current
kept up until the patient is able to breathe
without its aid or is dead.
Before the discovery of the galvanic battery, artif-
icial respiration was resorted to, which has
saved persons that would otherwise have died,
but this method has been entirely super-
seded by the galvanic battery which

is a great deal more convenient.

AN

Inaugural Dissertation

ON

Intermittent Fever

Submitted to the Examination

OF THE

Provost, Regents and Faculty

OF

PHYSIC,

OF THE

UNIVERSITY OF MARYLAND,

FOR THE DEGREE OF

DOCTOR OF MEDICINE,

By

Wm. Kelly McSherry

Of

Baltimore, Md

Session of 1867-68

Sulph. of Quinine

AN

Inaugural Dissertation

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By

Joseph R. Waples

Of

Milton. Sussex County. Delaware.

Session of 1867 & 1868

Opium

The Subject on which I propose to write is that of Opium. In regard to its Chemical history, Opium is probably better known than any of the vegetable Extracts, or inspissated juices used in Medicine. It has been the Subject ——

of numerous and elaborate experimental and analytical investigations, and the results of which fill many interesting pages in organic Chemistry. Opium is the dried juice of the poppy, (Papaver Somniferum) this is partly shown by the names of Poppy in English, and Pappaver in Latin; which are

said to have been given
to the plant, because
it was used as food
for young Children,
(Pap or Papa) to ease
pain and secure sleep.
In this County it
is used as a Medicine
principally. This impor-
tant drug is obtained
by making incisions
into the Capsule of the
Poppy plant, when

they are nearly ripe;
allowing the juice
to exude and thicken
upon the stalk or
capsule for twenty four
hours, and then scraping
it off, The incisions are
made downwards through
the outer skin only,
for this purpose, a
small knife is used,
consisting of several
blades, which when —

fastened together form
a figure Something like
the tail of a Swallow,
Of this Species of poppy
there are Several varieties,
of which the two most
used are the White and
Black, the former of which
is Supposed to yield
the greatest amount
of this drug. The white
poppy is annual with
a round Smooth Stem

Usually rising two or three
feet high, but sometimes
more than this, in a
good locality. There
are also several varieties
of Opium, but the
best Opium of Com-
merce, is a soft mass,
of a reddish or blackish
brown color, a waxy
luster, a strong disagreeable
odor, and a bitter
acrid nauseous taste

lasting long in the
mouth. The juice when
Collected is put in con-
venient vessels and after
Concreting, into a proper
Consistence, is Made up
either with or without
addition (but very
frequently to the Mass
is added an adulteration
of Some kind, very
frequently Consisting of Shot,
Sand, Iron, and Small Stones

it is then made into masses of different size, and shape, usually surrounded with leaves to prevent their adhering together, and then sent into Market. This comes in masses of different shapes, from a half a pound to two and a half pounds in weight, originally probably round, but when found in our markets

usualy of a flattened or
irregular Shape, in Conse-
quence of the pressure to
which they are subjected
while Soft in the Case
Containing them, On
their outer Surface, are
the remains of the leaves
in which they were orig-
inally Enveloped, and ad-
hering to it in greater
or less number. These are
added no doubt, with

the object of absorbing
moisture, and preventing
the adhesion of the lumps.
These are usualy as first
imported soft and lena-
cious in the interior, but
hard upon the surface.
when Completly dried by
time and exposure, they
are brittle and have a
shining and uneven frac-
ture. Opium when given
is moderatly stimulant-

to the part to which
it may be applied, to the
Circulation, and to the
Nervous System generaly,
but especially to the Brain,
its Subsiquent action is
that of a universal and
apparent Sedative; but
not a very good idea,
of the real powers of the
Medicine would be obtain-
ed from Such a definition
of its effects. In order to do

this, we must follow it
through different functions,
and trace its operation
carefully in each, step
by step. This would be
a very tedious task, in-
which, I fear I would not
be equal to the task;
therefore, I will leave
it for the present to
those whose duty it is
to enter into the Chem-
ical and Therapeutical

investigations, but will endeavor to give a Synopsis of its effects when taken in its different forms into the human System; Those who have ever tasted opium would not be likely to forget the taste, and if taken in Sufficient quantity to narcotise would not be likely to forget either the taste or effect, from

a full dose of opium —
taken internaly no other
immediate effect is felt
than a slight feeling
of warmpth in the Stomach
but a short time afte-
wards a sensation of fulness
is felt in the head Soon
followed by a feeling of
Ease and Comfort with an
Elevation and expansion
of the whole moral and
intellectual Nature, which

is among the most char-
acteristic of its effects, - a
high devotional Spirit, a
disposition to do great
things and an elevation
(as I have said before) of
the whole Mental faculties.
It appears to make an
individual for the time
a greater and a better
man; This Stage of the
effect is due to the insu-
fficient quantity taken

to induce sleep. The varieties of opium used in Medicine in this Country, are as follows the Smyrna, Turkey and East-India, of these the former is probably the most used, according to authors there is no difference between the particles of the drug which is brought from Constantinople and the Smyrna opium. It is supposed that the opium

Shiped from Constantinople
is Cultivated in the more
Northan parts of the opium
districts of Anatolia, while
that from Smyrna is
Collected in the provinces
more convenient to the
latter City and though
it may be possible that
the same kind of a
drug may be often bro-
ught from the two parts
yet there are grounds

for arranging it under
different varieties as derived
from these different sources
the Smyrna opium is
the variety which is beyond
all comparison. The
most valuable and sup-
posed to be the most abun-
dant in our markets the
parts in which opium is
cultivated are more num-
erous than the varieties of
opium itself, but the

parts in which it is chiefly
Cultivated is Turkey, Egypt,
India, & Persia, It was
Cultivated to a limited
extent in the Northern parts
of Europe, but it was afterwards
ascertained that the Opium
Cultivated in these parts
was of an inferior quality,
and in consequence of which
its Cultivation was to a
very great extent abandoned
but it is known even now

to grow wild in these local-
ities it was cultivated in
Greece, but to a more limited
extent than in europe or
at least we may judge so
as Homer Spoke of it as a
garden flower. In this
Country it is also exclusively
Cultivated as an ornamental
flower and is known as the
garden poppy. I have now
given a brief history of the
Cultivation, the nature and

the parts in which opium is cultivated. I will now proceed to speak of its Chemical and Medicinal effects, its relations preparations and the manner in which it is used in Medicine, The preparation of which, I shall first speak is the Tincture of opium. the process in which the tincture is made is as follows. take of opium in powder ℥ iiss alcohol dilute ℔ ii. Macerate

for Six days and filter through paper, when it is properly made the virtues of the opium may be considered as wholly extracted by the menstruum this preparation is commonly known by the name of Laudanum this form of opium is the one which is the most usually made use of it is used for all the purposes in which opium itself is applied, the Tincture of opium evaporated

on exposure. the liquid is rendered turbid by the deposition of the dissolved matter, therefore it should be kept in well stopped bottles to prevent its evaporation. I have frequently seen at the bottoms of old Laudanum bottles flakes of the solid extract and it may be readily conceived that if the extract is dropped out with the liquid that the narcotic

effect will be greatly increased and there are Cases on record in which death in Infants has resulted from this cause. I know of an instance in which an Infant was very seriously narcotised by being fed with a Spoon which had been previously used for the administration of Laudanum. a few drops having been left in the Spoon which had evaporated

to dryness. I think that every practitioner should be aware of this fact and guard against the use of Laudanum rendered turbid by evaporation. The Tincture of Opium acts on the System more quickly than the Opium in Substance, because it is in the liquid form and is more readily absorbed. Opium when taken

in small doses acts as a stimulant, but when taken in larger doses acts as a narcotic and sedative — depressing the nervous system to a very great extent, but in still larger doses death will be the result, unless proper measures are taken to counteract the topical effects of the opium, there are cases however in which

large doses can be given
without any dangerous
(but on the other hand
good and valuable effects)
I have reference to cases of
Delirium Tremens in these
cases large doses can often
be given with mark good
effect. Physicians who
reside in Citys and who
do not prepare their own
medicins but write prese-
riptions to be compounded

by the Apothecary Should always Specify their design when they order large doses on these occasions. The ordinary dose is about gtt XXV for an adult which is equivalant to grī of opium (Crude.) for younger persons the dose Should of Course be diminished. Therefore we must be governed by the Condition, age Sex & habit of the patient. The next

preparation which I would
Engage our attention is the
Camphorated Tincture of opium,
Or more Commonly known as
Paregoric. This preparation
is known in every household
as a very valuable Medicine
for Children an one in whose
virtues most Mothers have
great Confidence, there are
very few Cases in which it
Cannot be employed with-
out good effect; It is Chiefly

used in the following Diseases
Chronic Catarrah, Phthisis,
Asthma, Diarhoea, Dysentary,
Pain in the Stomach, and
is often used in Cough Mixtures,
and many other Complaints
to which the human family,
(but especialy the younger
portion) are subject. This
useful preparation is made
by macerating powered opium
Camphor, Benzoic acid, oil
of anise and Honey in dilute

alcohol, opium is the principal ingrediant & next in importance is the Camphor, the others may be considered as auxiliaries; This tincture is more stimulating than Laudanum; The dose of this preparation for an adult is 83i the dose for an Infant varies from gtt ii to gtt xx but though we must be governed as in Laudanum by the condition and

Circumstances under which
it is given: for Infants under
two years old the dose is
from gtt ij. to x+ as the
Case may require:
The next preparation of
which I shall speak is
the Acetated Tincture of
Opium, of which I shall
say but little, It is gene-
rally used as a substitute
for Vinegar of Opium or
which is probably better

known by the name of black drop, it is prepared by macerating opium in a menstrum of vinegar and alcohol for several days and filter through paper, but the only advantage which it possesses over Laudanum is that it is not so strong and that the active principal of the opium are modified by the action of the acetic acid

of the vinegar, this preparation sometimes agrees with patients who cannot take Laudanum; there are some persons who cannot take Laudanum in any form, this is the case with our distinguish Professor on Diseas of women and Children. The dose for an adult is about gtt XX which is equivalant to gr I of opium. The next preparation of which P

Shall Speak is the Wine of
Opium, (Vinum Opii) or
Sydenhams Laudanum.
It is made by Macerating
Powered Opium, Cinamon,
and Cloves, in Sherry Wine.
this preparation has to a
very great extent gone out of
practice it having been
ascertained to possess no advan-
=tage over Some other preparations
and indeed to Some very inferior
it is more agreeable to the

Smell & taste and in certain cases, more acceptable to the Stomach, than some of the other forms of which I have mentioned, It has been used with good effect by being dropped in the eye in opthalmia; The dose is about gtt xx There is another preparation of opium that has recently been brought in to use. The water Solution of opium which is a favorite remedy

of our distinguish Professors
of Surgery, N. R. Smith
in Cases of inflamation
and Acute Conjunctivitis
the Mode in which he
directs it to be Made
is by adding Opium in
powder ℈I to a pint of
water. The next and
last but not least
of the preparations of
Opium is Morphia, There
are other preparations but

all of which are of minor importance & do not as far as practical purposes are concerned interest the Physician's, Besides familiar Substance Such as Gums. Mucilage. Resin, & volatil oil. it Contains. Morphia, Pseudomorphia, Narcotine Codeia, Narceine. Thebaine. Meconine, Porphyropine, Papaverine, — Meconic acid, Besides a Small quantity of acetic-

acid, Sulphate of Lime,
Sulphate of Potash, & Iron,
of all these the most active
is that of which I have
just spoken & which is
now almost universally
known as Morphia or
Morphine, but Chemists
have decided that Morphia
and not Morphine is the
proper name for the alkaloid
of thes invaluable Medicine,
the best quality of Opium

Contains as much as ten-
per cent: It is Colorless. void
of Smell. and nearly insoluble
in water, but possessing an
exceedingly bitter unpleasant-
taste and what is called
by Chemist alkaline prop=
erties; It is a powerful —
narcotic & poisonous. Soothes
nervous irritation. Stills pain.
and when taken in a large
dose imparts to the Skin
a remarkable itching Sensation.

It is described by some as producing upon the System all the effects of the natural opium. This however is not generally the case. Hence it has not I believe been any where attempted to substitute this pure Chemical compound for the crude opium in the production of pleasurable excitement & gratification— The reason of this obviously is that the full & peculiar—

effects of the natural drug
is due to the combined &
simultaneous action of all
the numerous substances
it contains. each of these
change the effects which
would be produced by any
one of the others taken
singly as the attraction
of each planet modifies.
The course which would
be taken by every-one of
the others were it - the only

me which revolved round
the Sun, It is the result
from all their action that
the singular pleasure of
the opium Consumers is
derived at least three of
the constituents of opium
which I have named above
are known to be narcotic
and poisonous. These are
Morphia, Codeia, & Thebaine,
The Codeia in doses of five
grains produce in some

a State of excitement resembling intoxication. The especial action of the other Constituents upon the System is Still unknown or undecided. Indeed it is a remarkable thing in the history of opium, that as long as it has been known & extensively as it has been used both as a Medicine & an indulgence that we are Still So unable to Say what is the true action

of the drug we shall save ourselves much time and useless speculation by at-once confessing our ignorance on this point. It is no doubt the complicated nature of the problem which renders the Physiological Solution so difficult in the Crude Opium, as I have said nearly a dozen different substances are mixed in different proportions & given

at once, The effects of such a mixture we can scarcely conceive in all cases satisfactorally to explain; The proportion in which the several active ingredients are mixed up in the opium of commerce varies much in different samples of the drug; The Country or locality in which it is grown the variety of poppies which are cultivated, the peculiarities —

of the Season during which the Sap is collected, the way in which it is dried and afterwards prepared for Market, all these Circumstances influence the proportions of its constituents & Consequently Change the action of the mixed Substance upon the human System. — The Smyrna Opium is generally Considered the best

in European markets, but
even in this the active —
ingredients (Morphia) varies
from four to fourteen per
Cent. of the ingredients of
which I have before spoken
Morphia being the most
active is also the most
valuable & by the proportion
in which it exists in the
Samples from different
localities, determine very
much their relative estimate

in the market and the best Indian opium is inferior to the Turkey, & never yields more than four per cent of morphia; but it is richer in the less esteemed ingredient (narcotine) The Persia — opium is equally rich in morphia, besides the sulphate there are three other kinds which are not however so extensively used but require

our passing notice. there are the muriate, acetate, and pure Morphia; all of which possess very valuable properties & are indeed Conceidered indispensible in the art of Medicine. Morphia is valuable as as an external application upon denuded Surfaces; when the internal administration of the drug is contraindicated. when required as a general remedial agent it is usually

applied to the epigastrium.
When its local effects only is
necessary; as near the seat of
the disease as possible upon
Surface denuded by blister.
or by Subcutaneous injection.
It is administered internally
in the doses from 1/6 to 1/4 of a grain
according to the exigencies of
the case, one sixth of a grain
of either of its salts being
equivalent in narcotic effect
to one grain of opium. Dr -

overdoses there is scarcely ever an increase of the powers of life perceptible. The frequency of the pulse is decreased whilst its volume remains nearly the same; Languor and drousiness soon supervene. Livid Countinance, Stertorous breathing; insensibility to external impressions; Coma and apoplectic sleep eventuate in Collapse from utter Exhaustion, and Death soon closes

the Scene. Nothing is known —
Pathologically of its mode of
action. Dissection affords no
Clue; There seems to be a dificincy
in the action of the brain
suspending respiration and
destroying vital powers.
The remedies in cases of
poisoning by Opium are free
and immediate evacuation
of the Stomach: either with
the Stomach pump or by
emesis: The latter is probably

preferable. Active emetics should be employed. Tart antimony, or the Sulphate of Zinc and Ipecacuanh. Applications should be made freely of Cold water to the head and Chest. The administration of Strong Coffee, and the use of the Galvanic battery to counter-act the narcotic effect. When Stimulants are admissable the Carbonate or aromatic Spirit of Amonia with brandy. If the case

has advanced too far artificial means must be resorted to and presistently maintained until the action of the heart becomes fully established. There may be a possibility of recovery if there has not existed any previous organic derangement and the difficulty is purely functional. There is probably no time at which opium is so highly appreciated as when its palliative effects

are required only. In those
incurable diseases, which have
baffled all human Skill.
and which accompanied by
the most excruciating pains
are fast hurrying their victim
to dessolation: when mental
anguish keeps pace with
physical Suffering; and there
is no ultimate hope of rest
on earth: Then indeed it
becoms almost a priceless boon.
relieving the pain: alleviating

the Sorrows, tranquilizing
the Mind directing the
Scattered thoughts to futurity
and gently Smoothing the
path-way to the grave

AN

Inaugural Dissertation

ON

Pneumonia

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Pneumonitis; or Pneumonia.

Anatomical character of Pneumonia

Pneumonia is inflammation of the pulmonary tissue, and commonly presents three stages which may be traced in regular succession in the patient, or which may be found coexisting in various portions of the lung in the dead subject. In the first stage, which is the stage of congestion, this disease is rarely fatal; consequently its anatomical changes are not frequently witnessed. But from the few autopsies which have enriched science, medical men have ascertained the existence of hyperæmia, or engorgement of the blood vessels of the lung. In this condition the lung contains, of course, much more blood than in health; but the air cells and bronchioles are still, to some extent, pervious to air.

On section dark venous blood flows from the cut surfaces.

In the second stage the overcharged vessels relieve themselves by fibrinous exudation into the interstitial tissue, and by slight hemorrhage, into the small bronchial tubes which hemorrhage, mingling with the bronchial secretion, gives rise to the pathognomonic expectoration of pneumonia. The matter exuded into the interstitial tissue, is a peculiar coagulating material of very low vitality, having no power except that of coagulation. This is called the stage of red hepatization. Dr. Flint says that the term red hepatization is a misnomer, - that the color of the lung is not red but usually brown. - When exudation has taken place the quantity of blood is no longer above, but rather below that of health. The weight of the lung however, is greatly increased on account of the solid matter that is exuded,

and in rare instances the size of the organ is augmented; but generally the specific gravity is increased without the dimensions being affected. In this stage, the tissue is still unbroken.

The next, or third stage of Pneumonia, is known as the stage of gray hepatization. In this stage the appearance, and condition of the lungs are greatly changed from what they were in the last mentioned. The change begins in the exudation, which is no longer dying, but dead. Then comes putrefaction. This death and putrefaction communicate themselves to the tissues, and all are corrupted together. There is no resolution in the purulent infiltration of Pneumonia, only complete disorganization of the original matter. The term gray hepatization is said to express very accurately the appearance and condition of the lung in that stage.

This disease does not always pass through the several stages here mentioned. In fact it most generally subsides during the second. But the disease will run its full course if the powers of life do not rally sufficiently to check it, and to permit absorption to go on; for the exudation of pneumonia is always absorbed, never expectorated.

Pathological character of Pneumonia.

Pneumonitis is an example of acute inflammation affecting the membrane lining of the air cells, and the bronchioles of the lung.

The microscope shows, that in the condition known as congestion, the blood flows through the part very slowly and laboriously. The blood disks are seen to be attracted towards the capillary walls, and to adhere to them.

Finally, the capillaries that are not in the most direct line from the arteries to the veins, become entirely obstructed. This obstruction closes one capillary after another, until there is left no part for the blood, and it ceases to flow through the part altogether. Should this condition continue, there is speedy exudation of matter from the blood of the pulmonary artery. This is fully established inflammation. Inflammation is defined by some authors to be a condition in which the rapidity of the motion of the blood is partly increased, and partly diminished. But the fact is, where inflammation is fully established there is no circulation. While the circulation is being interfered with there may be an irregularity in the motion of the blood, but this irregularity exists no longer. How could it? The irregularity in motion is easily accounted for. We have stated that in

the commencement of inflammation one capil-
lary after another (for it always begins in the
capillaries) is obstructed until all circulation
through the part is cut off. Now it is natu-
ral to suppose that while the attraction which
finally draws it to the wall of the vessel, is
being exerted upon the blood disk its progress
is greatly retarded, and that less blood flows
through the vessels than usually. It is equal-
ly natural to suppose that as the circulation
is retarded in this capillary it must be ac-
celerated in some other, in order that the usual
quantity of blood may flow through the part.
Thus it continues: the slower it flows in some
the swifter it must flow in others, until all are
quiet together.

It was formerly supposed by Whar-
ton Jones, that inflammation was caused by the

cessation of nerve force; that the walls of the vessels were endowed by the nerves with a power of repulsion toward the blood disks, and that while this power continued there could be no adhesion; but after quite a number of experiments he found that, though severing the nerve which accompanies a vein would produce congestion for a short period, the circulation subsequently went on more freely than ever. He was compelled in consequence to give up this ingenious and probable opinion. He now adopts the opinion of Hunter, that stagnation depends upon inspissation of the blood plasma, on its containing an increased quantity of fibrin and albumin, and rests much on the fact that such a condition of the Liq. Sanguinis whether natural or imitated artificially, is found to increase the tendency of the red corpuscles to aggregate together. *

* Jones & Sewiking's. Path: Anat: p - 124 - 51.

Dr. Sewiking says, "I would now add that I believe that it is through failure of the nutritive power of the tissues that stagnation occurs". There is a question upon now of considerable interest as to the chemical condition of a part in which inflammation is lighted up viz: Whether inflammation is or is not per oxydation of the tissues. Without inquiring whether all inflammation is per oxydation or not, we will simply inquire whether inflammation of a lung can possibly be so. Per oxydation of a lung would be too much oxygen in the lung. The lungs are nourished with blood carried from the aorta by the bronchial arteries. Blood is also pumped into them by the pulmonary arteries. Oxygen reaches the blood only through the lungs. An inflamed lung is impervious to air. Now where is the oxygen obtained that per oxydises the lung tissue since the lung is impervious to air, and all the blood that flows into it is venous

from the pulmonary artery, except that of the small bronchial artery? It is true this condition is not evident in the early stage of the disease, because the inflammation spreads gradually, and the part not invaded is in working order. But there is no possible way for oxygen enough to be absorbed to cause a chemical difficulty. But suppose this chemical difficulty could exist, would not the venous blood of the pulmonary artery (for that is the last which the disease obstructs) carry off the superabundance of oxygen? Now if inflammation is per oxydation, the blood which the inflamed part contains must be arterial blood. And is it so? It is certainly not! -

Treatment of Pneumonia.

The object of treatment is the cure or palliation of disease. The manner in which this is accomplished is to combat the tendency to death.

Death always results from prostration, and to combat the tendency successfully the Physician must overcome the cause of the prostration. For instance if death is likely to result from pain he must narcotize, if from hemorrhage, he must astringe, if from nervous depression he must stimulate, if from the heart clot of pneumonia he must put the fibrin in solution if possible. The different stages of pneumonia require different treatment In the first stage the indication are to diminish the intensity of the inflammation, and to relieve pain. This latter indication is almost constantly present. In the second stage to promote resolution and support the powers of life. In the third stage to support the powers of life is the only indication. A few years ago the first stage of pneumonia and sometimes the second, too, was treated as an acute inflammation by copious venesection.

But the wonder pathology of the present day has greatly changed this treatment. The abstraction of blood is seldom necessary at this day. It is useful only so far as it acts mechanically, not otherwise, but this action is sometimes useful even to the saving of life. When the lung is in that characteristic condition known as congestion, the circulation through it is slow, and the resistance that the blood meets causes the heart to contract with most exhaustive violence. The reason of this will be very easily understood when we consider that perhaps three fourths of all the blood in the body flows through one lung. Now it is plain that as one lung has to furnish a passage for the blood of both, the original power of propulsion must be vastly increased. It is equally plain that the dimensions of the passage must be increased to accommodate the abnormal quantity of blood, and as the passage through dilatable is not sufficiently so to

permit the blood to pass without some acceleration of its motion, that the motion of the blood must be accelerated to accommodate itself to the passage. It is very evident from the large amount of blood in the lung and its accelerated motion that oxygenation cannot go on properly and that carbon will increase to a fearful extent.

C. Hanfield Jones, the great English Pathologist says that, the larger the quantity of blood which is circulating in the vessels, the greater must be the accumulation of carbonic acid when any asphyxiating cause begins to operate and the more severely will its effects be manifested. If, however the mass of blood be diminished, the respiratory action will also be diminished.

How greatly beneficial then will be the abstraction of blood in this condition not only as a matter of economy to lessen the labor of the lung and heart but as a grand prophylaxis of coma and

death. A man's blood is his life; but he only needs blood in proportion to the amount of lung he has; if his lung is diminished and his blood not, he will die;- that which was once his life will kill him. Blood, not properly renewed, is the most horrible of all poisons. Congestion of a lung interferes with the oxygenation of the blood within it, by crowding the air vesicles and the capacity for air is diminished, just as the amount of blood is increased. Then by lessening the quantity of blood the crowded air-cells are relieved and permitted to expand to their full capacity. Depletion had best be performed with cups. The advantages of counter irritation will then be added to those of depletion.

When the abstraction of blood is thought to be necessary the patient should always be prepared for the operation beforehand. He should take some concentrated nourishment, to lay the foundation &

for good blood to supply the place of the devitalized that is to be taken away. Though this is not always practicable. The abstraction of blood is admissible only if, with the inflammation, there is the high sympathetic fever, the pulse indicating augmented powers of the heart's action, and if the patient be robust and in good health when attacked, - the disease not involving death by asthenia. Although pneumonia is not cured by blood letting, and may be rendered fatal by excess of it, yet a moderate loss of blood in the first stage of the disease, has sometimes the power of determining favorable, both in its type and duration. Observe the experiments shown us in the great lecture-room of nature. You see that often great relief is experienced when blood is expectorated in the first stage of the disease; That the inflammation ceases to spread over the tissue of the lung as soon as the mucous is stained red. Get the start of this by previent abstraction of blood.

whenever circumstances will allow it. It will diminish the dyspnoea, the oppression, and the pain; and you will be quite safe in withdrawing blood, so long as you bear in mind that you are doing a certain harm at the same time as a certain good, and anticipate the harm by proper nutrition and sustain the strength of the body.

Observe also the experiments exhibited by nature in localizing the bloodletting. The natural relief of pulmonary congestion is haemoptysis; that is the emptying of the vessels of the lung. You cannot however let blood from the bronchial and pulmonic vessels. What shall you do then? Why make the nearest approach in your power by taking it from the exterior of the chest — it is through cupping glasses, or leeches. The relief is usually very rapid and immediate, and the risk run from a small loss of blood, very little. The fluid you take away though called by the common name of blood is not the same as an equal quantity circulating

in the veins of a healthy man. It is more or less useless for the purposes of life, and the loss is far from being in a direct ratio to the amount taken. It is far more important that a patient should gain the use of a congested lung, than that he should keep such imperfect stuff circulating or stagnating in his blood vessels. Blood letting is of course applicable only to the first stage of pneumonia, and only when an immediate effect is required to be produced.

The mass of blood may be temporarily lessened by saline purgation and diaphoretics. The frequency and force of the heart's action may be affected by nauseant sedatives, such as antimony and ipecacuanha, and by the direct sedatives, viz: digitalis, aconite, and the veratrum viride. These require several hours to produce their results, but blood letting begins to act as soon as the blood begins to flow. If it is possible to wait however, purgatives and sedatives had better be used instead of blood letting. Saline purgatives are also very beneficial in this stage. They carry off the watery portions of the blood and

thus relieve its bulk without interfering with the more vital part. If time be allowed them they produce the same result as blood letting without any of its bad effects. Sedatives too are very useful and frequently obviate the necessity for the abstraction of blood when otherwise it would have to be practiced. In inflammation there are always effete matters in the blood, resulting from the decay of the body. These matters acting upon the nervous system produce most fearful symptoms which it is in the power of sedatives to allay. But the diagnosis should be clearly made out before they are administered. For instance if the violent action of the heart arises from impediment at any of the cardiac orifices sedatives then would hardly be admissable, as the disorder is not a transient one; and even if the diagnosis is clear and there is found rapid congestion of a whole or a large portion of a lung, and the patient is of full habit sedatives had best not be applied until the bulk of the blood is somewhat reduced; then sedatives may be relied upon. Those most in use, are ipecacuanha, antimony, veratrum viride, digitalis, and accinite. Ipecacuanha is very highly spoken of

in the first stage of pneumonia, and is really the most reliable among the nauseant sedatives. It has been used quite extensively in France and has been pronounced second to no other remedy in this stage by the most competent experimenters; among whom may be mentioned [illegible] lin, Cadet, Delioux and others. It does not occasion diarrhoea, but rather confines the bowels, — a result greatly to be desired in pneumonia.

It has been recommended by the authorities above mentioned to subdue the fever, excite perspiration, depress the effects of the blood, and to hasten the resolution of the disease. The most frequent effect [illegible] of the nauseant sedatives which is a tonic. The drug has been used in almost innumerable instances of pneumonia, and frequently with some good effect. But it is certainly viewed with some distrust by many of the [illegible] American and English authorities. The action of antimony is to increase destructive metamorphosis, and to decrease the force of the heart. By such means it certainly does appear to have a controlling effect on inflammation. But it is a force that is exercised upon the inflammatory process and at the expense of depressing the general vitality of the patient. From this it would seem that the

remedy in question is peculiarly unsuitable for cases in which an effect is desired to be quietly produced. [illegible] the head of the direct sedatives. There are two classes mentioned under this head viz; the arterial and the nervous sedatives. There are but two arterial sedatives; digitalis and veratrum viride.

Digitalis is a strong but also a gradual sedative. In its first effects, it is said to stimulate the heart's action, but after a time it gradually reduces the number of its contractions very low. The experiments of Sanders throw considerable doubt upon the [illegible] depressing power of digitalis. By more than two thousand trials of its influence upon healthy persons, he was led to the conclusion, that the direct effect of small doses of this drug was to increase the strength and frequency of the pulse, and even to develope an inflammatory state of the system: yet when [illegible] the effect was produced if the dose was augmented or continued, a [illegible] diminution of the pulse and debility ensued. [illegible] digitalis once reduced the pulse from ninety to twenty in the course of [illegible] with the digitalis. Veratrum viride is said to be [illegible] quickly and directly sedative.

One of the most important remedies in pneumonia is found the proper [illegible] using of opium. It is useful in every stage of the disease. It is useful in the first stage, because it has, to a certain extent, a controlling [illegible] over congestion; and in the second and third stages, because it relieves [illegible]. It controls [illegible] by lessening the frequency [illegible] [illegible] [illegible]. It controls the nervous system by lessening the sympathy which exists between it and the body. In diseases which affect the tissues of the body the nervous system is apt to become excited, and lose the proper and take on a diseased sympathy with the diseased tissue. Opium obviates this by taking the sensorium partially under its control, and when this is done the general system will suffer but little.

Dr. Chambers has reduced the number of the contractions of the heart from one hundred and twenty to fifty six in twenty four hours with opium. Such an influence as this remedy brings to bear, we might say, would almost positively relieve a congestion, and when in the second or third stage, the tremulousness and delirium indicate that the nervous

System is fast sinking before the disease, there is nothing that will so effectually check its morbid ravages as opium; and opium may be generally relied upon. It is the most reliable remedy of the Materia Medica for that bad complication of pneumonia & diarrhoea.

Poultices too, are useful in any stage of the disease. They should be made of corn or linseed meal, and spread sufficiently thick to retain their heat and moisture for a considerable time for in heat and moisture consist their virtue. The action of warmth and moisture on animal tissues tend greatly to increase their vitality. You may see with the naked eye a healthy surface of skin under their application renew its life – it empties itself more quickly of its pale, livid venous blood, and glows with a fresh access of the arterial stream, it is more delicately sensitive when used for the purposes of touch, at the same it feels no pain, but on the contrary, an exquisitely pleasurable calm

We cannot see with our eyes this renewal of life in internal organs, but we may infer that what place in one tissue, takes place also in another, with modifications

of course depending on distance and other difficulties of application; and Chambers says that we may positively infer this renewal in pneumonia from the result, for you find the dyspnoea diminished, and the health easily drawn in spite of the weight of the pulltice: the hot fevered skin becomes moist and active; and soon the ribs begin to move again, and air is readmitted into the hitherto paralyzed lung tissue. He says again: "I cannot speak too strongly of the importance of your adopting this treatment, and letting all others be passed by rather than this. This treatment is useful in every stage of pneumonia."

Now a few words on blistering. Many practitioners are opposed to the use of cantharides in all stages of pneumonia. They say that the blister interferes with physical exploration of the chest; and this is unfortunately true in a great measure. But then if we consider the reaction set up by cantharides is more likely to cause absorption than any other remedy we can apply, and that

if the powers of life are sinking before the disease this condition is not first detected by auscultation, but by the general symptoms of the case, we will see that the grounds of objection is not so great after all. The counter-irritant effect of the blister may be beneficial in the second or third stage of pneumonia after the active symptoms have subsided. While the fever is still high this effect is of no benefit, and on the other hand may be positively detrimental, as it may, and most likely will increase nervous and arterial excitement.

Now let us inquire what part of the action of Cantharides is beneficial. Is it the destruction of tissue, and drain of original matter? Why in eczema herpes, and above all in small pox there is an excessive amount of blistering and destruction of tissue, and drain of organic matter, but instead of distant inflammation being arrested it is produced by them. In small pox the more pustules there are on the body, the more likely is the patient to have bronchial catarrh, and pneumonia. Burns have a still closer analogy to the morbid

process established by cantharides; but the greater the extent of burn the more risk there is of internal inflammation. Now mark the stage of their action in which blisters do good. Their benefits are experienced not when the destruction of epidermis is at its height, not when there is most serum and mucus secluded but when the healing begins. Chambers says the chief advantage arising from the action of Cantharides is derived from the renewal of growth which is entailed on the tissues by the self renewing skin. He says further that with quickened capillary circulation follows increased endosmosis according to the well known law that, the attraction of fluids through membranes is in the direction of the fluids set in motion and proportioned to the rapidity of the motion

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Scarlatina

Scarlatina is a febrile contagious disease, characterized by inflammation of the fauces, and a scarlet rash, appearing generally on the second day, and ending in desquamation of the cuticle from the sixth to the tenth day.

Scarlatina was long confounded with Rubeola, and was considered merely as a variety of that disease.

The credit of having been the first to have alluded to this disease as a peculiar affection, is given to Ingrassias who treats of it in a work published by him in 1556.

Dr. Withering has the credit of being the first who clearly and distinctly point-ed out the peculiar characteristics

between this disease and Rubeola, and established its claims as a distinct disease.

Most authors describe this disease under three varieties, S. Simplex S. Anginosa and S. Maligna.

The disease is essentially the same in all the varieties, and produced by the same cause. the mildest form may give rise to the most malignant type and vice versa. the Malignant to a milder form.

I will first describe Scarlatina generally, and afterwards refer to its different varieties.

Symptoms, Course &c. Either with or without languor, weariness, chills

and pains in the back and limbs, the patient is attacked with fever, the pulse is frequent, the skin hot and dry face flushed, tongue furred, great thirst and muscular weakness, Sometimes there are nausea and vomiting, sometimes headache and symptoms of nervous disorder, as restlessness and delirium, Stupor and coma.

The fever is of every possible grade, from a mildness hardly amounting to disease to the highest degree of violence and danger.

Along with the fever, there is almost always more or less irritation or inflammation of the fauces, which upon being examined appear red and not

unfrequently swollen. the whole interior of the mouth presents the same appearance, and the tongue although coated with a white fur presents red papillae projecting through it upon the surface and the tip and edges are red, it may also be covered with a dark or brown incrustation.

The rash makes its appearance generally upon the second day of the fever. sometimes earlier or later, sometimes at the very commencement of the disease, as far as can be ascertained from the statements of the patient or his parents, as there were no other symptoms of the disease until it made its appearance.

The rash usually appears first upon

the face, neck and breast, and gradually spreads over the whole body and extremities during the twenty-four hours.
Sometimes it begins in small red points which coalesce into patches and in a few hours form a continuous scarlet colour over portions of the surface.
Sometimes the eruption is very scanty presenting only a few points here and there or patches of moderate extent, but generally it covers more or less the whole surface of the body.
The scarlet colour is diffused equably over the face and neck, but presents a deeper tint in the flexures of the joints, as in the groins, armpits and the bend of the knees and elbows.

The colour has been compared to that of a boiled lobster by most authors.

It disappears upon pressure, but returns again as soon as the pressure is removed.

The surface is smooth to the finger when passed over it, as the rash is not perceptibly elevated, although, sometimes there is a roughness, especially upon the limbs, owing to the enlargement of the papillae.

The cutaneous eruption is attended with a sense of burning or itching which is very annoying to the patient.

The fever does not abate upon the appearance of the rash, but continues throughout its whole course with various degrees of violence.

The pulse is usually very frequent often 120 or 130 in a minute and sometimes more frequent. Sometimes it has considerable force.

The skin is hot and dry, and the temperature is often 105° or 106° of Fahrenheit, and is reported to have reached as high as 112°.

The bowels are usually constipated and in the advanced stages diarrhoea sometimes occurs.

The inflammation of the throat in mild cases never exceeds that already mentioned but sometimes becomes the most prominent symptoms, the throat becoming swollen both internally and externally, causing painful deglutition, and the respiration is much impeded.

The disease usually attains its height from the fifth to the ninth day, and the symptoms begin to decline, the rash fades, the heat of the skin diminishes, the pulse becomes slower and fuller, the affection of the throat abates, the tongue casts off its fur, if it had not done so before, leaving it red, glossy, and with prominent papillae, with the decline of the rash, desquamation usually begins.

Where the rash made its first appearance, the cuticle is cast off in scales from the face, neck, breast, &c. and where it is thick, as upon the palms of the hands and soles of the feet, it comes away in large flakes

or patches.

Having given a general description of the disease, I will now consider its different varieties,

Scarlatina Simplex.

In this variety of the disease the symptoms are general debility, nausea, chills, pain in back and limbs, followed by fever and thirst, and absence of the throat affection, or if present in a very slight degree.

On the second day of the fever little red points, at first a light red, then becoming of a deeper colour, make their appearance on the face, neck, and breast, in great numbers, and during the twenty-four hours similar spots appear

over the whole surface of the body.
The scarlet colour is of a deeper tint on the groins and flexures of the joints, the pulse is full and frequent, the tongue coated with a white or creamy coat, through which red and enlarged papillae appear.

About the fifth day of the disease the symptoms decline as before stated, and desquamation takes place and continues until the whole cuticle is cast off.

Sometimes this variety of the disease is so mild that the patient is not confined to his bed, and has none of the precursory symptoms, not aware of having the disease until desquamation has taken place.

In this form of the disease unless some

dangerous sequelae follow there is very little danger to life.

Scarlatina Anginosa.

This variety of the disease is characterized by the affection of the throat being a prominent symptom.

It commences with a more intense fever, a stiffness of the jaws, soreness of the throat, and pain in swallowing.

The pulse is more frequent than in simple Scarlet fever, and there is a greater tendency to delirium.

The Eruption as a general rule is less copious, and less diffused, it may appear on a particular part of the body, or in patches scattered over it. in many instances however it is as general and

and uniform as in the simple variety.
It is generally somewhat later in making its appearance, occurring on the third instead of the second day. It also sometimes disappears suddenly and after a longer or shorter interval appears again.

In making an examination of the fauces, the Tonsils, Uvula and Palate are swollen and of a deep red colour. Patches of exudation resembling false-membrane are generally observed on the Tonsils. they are of a greyish colour, sometimes covering the whole of the fauces, and spreading into the Pharynx.
When the throat is in this condition, there is always more or less swelling externally, in the region of the Parotid and Sub-maxillary

glands, this tumefaction is sometimes so great that the patient is unable to open his mouth to permit of an examination of the Fauces, deglutition is painful and difficult, and when attempts are made to swallow liquids, they are regurgitated through the nostrils.

Symptoms of Gastro-enteritis occasionally make their appearance, in consequence of this acrid secretion, which is swallowed, the patient not being able to throw it out.

The exudation upon the fauces is either spontaneously thrown off, or gradually undergoes absorption, leaving the surface red.

The tongue generally casts off its fur at an early period, becoming bright red, smooth, and shining or rough with enlarged

and projecting papillae.

The Eruption is a little later in fading than in the simple form, the fever and throat affection may continue for a few days after desquamation has commenced.

The Patient rapidly convalesces unless the symptoms assume the Typhoid Character, or suppuration has taken place.

This form of the disease is more apt to prove fatal than the simple, yet in a large proportion of cases the Patient recovers at the regular period.

Scarlatina Maligna.

This variety of the disease is sometimes ushered in by rigors, giddiness, acute headache, a sense of heat and soreness of the throat, sometimes vomiting or

purging, violent pains in the back and extremities, a greater disposition to delirium than in either of the other varieties.
The Pulse is feeble and frequent, the eruption is irregular in making its appearance, sometimes not until the fourth day, and is seldom permanent. it presents a purplish or dark-red hue, the throat presents a deeper red-tint than the Anginose variety.
As the disease advances, the symptoms assume a more decided malignant character, the pulse is more feeble and irregular, the Eruption disappears, the tongue is covered with a brown fur, the lips and teeth are covered with sordes, the tongue and lips are frequently cracked or

fissured, and bleed, the throat is covered with a thick, viscid secretion, which causes a fetid odour to the breath, and unless these symptoms abate under proper treatment the patient must perish.

During an Epidemic of Scarlatina sometimes this variety attacks the patient which completely overwhelms the system, there is such sudden prostration that the system makes but feeble resistance, and is unable to counteract the effects of the poison, and the Patient dies, even before the eruption or other symptoms appear.

Sequelae.

Among the various Sequelae following Scarlatina, the swelling and suppuration of the Glands, particularly the Parotid

the most common and troublesome, forming abscesses which exhausts the remaining strength of the Patient, by the copious discharge of Pus, after having passed safely through the fever itself and either succomb to it, or their Convalescence is greatly protracted.

Partial deafness has frequently followed this disase, the Eustachian tube having been closed after ulceration.

Dropsy is another and perhaps the most common of the Segulae, principally Anasarca, although some of the other forms of it occur, The Patient is most liable to be attacked with it during the time of desquamation, and for several weeks after it.

The cause is no doubt in consequence

of too early an exposure of the delicate skin of the Patient to cold.

Dropsy is said to follow more frequently after an attack of the simple form than either of the other forms, and if exposure is the cause, it would naturally be so, for the Patient not having suffered much diminution of strength, is not necessarily confined to the house, as one who is convalescing under either of the other forms of the disease.

Other Sequelae are Albuminuria, Opthalmia, Bronchitis,

Cause. The cause of this Disease is no doubt a specific poison, and is generally believed to be contagious, and when it invades a family all of them are generally affected.

The contagiousness of Scarlatina has been

doubted by some, because all who have been exposed to it have not contracted the disease, and that some members of a family escape.

In several epidemics of this disease which visited my own neighborhood, the cause was always traceable to the Patient having been in communication with the disease.

Epidemics of Scarlatina differ greatly, at one time it may be of the mildest form and during another it may be of the violent and most Malignant type. Thus during one Epidemic almost all may recover, Whilst during another the greater number die,

Scarlatina prevails at all seasons of the year, and persons of all ages are liable

to it, but Children are much more frequently attacked.

As a general rule, an Individual having had this disease is not subject to a recurrence.

Diagnosis - In the early stage of Scarlatina, before the eruption appears it may be mistaken for other febrile diseases. the excessive heat of skin, the extreme rapidity of the Pulse and redness of the fauces, are its most Pathognomonic symptoms.

It might be mistaken for Rubeola, but it may however be distinguished from that disease by the earlier appearance of the eruption, its not being raised above the surface, its colour being of a brighter red, and not being crescentic in shape, also by absence of the Catarhal

symptoms, the temperature is more uniform whilst in Rubeola it is increased during the appearance of the eruption and very rapidly falls.

Prognosis.

We should be very guarded in giving the probable results in a case of Scarlatina, as an apparently Mild form often assumes the most Malignant, and the Patient dies suddenly, when supposed to be free from danger, whilst others of the Malignant and more dangerous form frequently recover, also they are liable to very serious sequelae.

In Epidemics of this disease the character of the epidemic, whether of a mild or malignant form would aid us in giving

a probable result.

In mild forms of the disease we could give a favorable Prognosis with some confidence, Whilst in severe cases, where the eruption is late in making its appearance, or suddenly disappears, with other bad symptoms, as Delerium or Coma &c. it would be very unfavorable.

Treatment.

In the treatment of Scarlet fever, the Practitioner should always bear in mind that this disease has a regular course to run and cannot be aborted.

Many cases of Scarlet fever, will end favorably without any Medical Treatment

In mild cases little more need be done than regulate the diet, keep the apartment

well ventilated, and of a moderate Temperature, and if the bowels are constipated administer a gentle Purgative, and keep them open and regular. Sometimes at the commencement of the disease, if the Stomach is overloaded with food, an emetic is often followed with a very happy result. To allay the thirst which always accompanies this disease, Crushed Ice may be given and swallowed as it melts. When the skin is very hot and dry, the body should be sponged with cold or tepid water whichever would feel most grateful to the Patient. When the skin is irritable and itching and disturbs the rest of the Patient, an inunction with Glycerine, Lard, or some Unguent, should be used, which will speedily

releive it, and contribute much to the comfort of the Patient.

In the treatment of the Anginose and Malignant varieties we must treat the Symptoms as they appear, the throat will particularly require our attention, if the Patient is able he should use a gargle, a very good one is Capsicum with vinegar and water, or Tannin ℈i Aqua f℥iij Mel et Saccharum aa ℥ß.

If Pseudo-membranous patches are observed in the Fauces Sul. of Zinc or Nit. of Silver may be used with advantage, if there is much Foetor Creosote gargles may be used.

In very severe attacks of S. Maligna ushered in with high fever, early appearance and fully developed rash, with a great degree of Prostration and delirium,

great caution is to be observed, not to reduce the vital powers, but resort to stimulation, as this condition obtains but too often as the result of exhaustion of the vital powers and nervous centres, than the result of inflammation of the brain, for which it is but too often treated, and the Case looked upon as a hopeless one.

Inaugural Dissertation

on

Syphilis

Submitted to the Examination

of the

Provost, Regents and Faculty

of

Physic

in the

University of Maryland,

for the degree of

Doctor of Medicine,

by

Theodore H. Leach.

Luray.

Page County

Virginia.

Erysipelas.

This is a constitutional affection characterized by a peculiar kind of inflammation – which last is circumscribed in its extent – but manifests a proneness to continuous spreading, and whose seat is chiefly in the true skin and mucous membrane (containing the lymphatic system) but is innately found extending to, and involving the cellular tissue beneath these structures. Indeed, this tendency to involve the cellular tissue beneath the original seat of disease, appears to exist as a natural characteristic in several forms of Erysipelas, and should, I think, enter into the definition of the affection. – Dr Watson defines it as being an idiopathic inflammatory disorder, running a tolerably regular and definite course, attended by an eruption – and often prevailing

Epidemically. The disease, as he describes it, falls nat-
-urally into that group of exanthematous diseases
which includes Small-pox, Measles &c &c; and Dr.
Bird also, speaks of the analogy its phenomena
bear to those of the febrile Exanthemata, and
cites cases and experiments to indicate that
there is a relation existing between Erysipelatous
inflammation and that of Gout and Rheuma-
-tism. — Considering the local disease, I would
call it Symptomatic where the inflammation
is preceded by such premonitory symptoms
as fever, rigors, nausea and vomiting: in which
case it might be termed an external man-
-ifestation of Constitutional disorder, or an im-
-pure state of the blood, caused by impeded as-
-similation and excretion. But I would consider
it idiopathic, where the local lesion was the

result of a wound or the application of some irritant — succeeded by constitutional symptoms which appear to be due to the entrance into the general circulation of that purulent or poisonous matter which is generated in the affected tissue. — — — — I believe that Erysipelas is essentially a blood disease — induced mainly by any those causes which interfere with the natural processes of assimilation and excretion. Extensive wounds show that in this disease, as in Scarlatina, there is a derangement of the renal functions — with an excess of Uric acid and Extractive matter in the blood — the removal of which are effected by their resulting nutritive powers. The presence of Albumen in the Urine, during the suppurative stage of this disease, is another proof of the correctness of our

-position. If it is true that "impure lymph is an evidence of an impure state of the blood previously", we must be further strengthened, for we read that "the lymph which is secreted is incapable of organization, and has no disposition to form a sac"; and again, in the severer forms of the disease, we see that the exudation, be it of whatever character, degenerates rapidly into pus which is thin and ill concocted. And we judge the pathology by the character of the primary symptoms—(such as a feeble and frequent pulse, tremors, and a dry and brown tongue,) and the secondary phenomena of the malady—which last are fever of the hectic kind, and the formation of collections of pus not only at the seat of primary disease but in other parts of the body; there, in the several localities, lighting up fresh

vices, & then again, our remedies bear witness to the nature of the disease; for we find the local affection, in many instances, resolving under the exhibition of those agents which specially affect the secretions, and restore a due state of sanguineous to the vital constituents of the circulating fluid. The tendency to change its seat of, metastasis, also gives evidence of its origin in a vitiated state of the blood.

The several forms of the disease show a preference in their anatomical seat; - the simple variety affecting chiefly the face and head; the oedematous, the loose cellular tissue in various parts of the body; the Phlegmonoid, the trunk and limbs.

These sub-varieties, & the character of the specific material, in the several cases, are indicative of the particular character of the blood vessels, as

its comparative capacity for supplying corpuscular or non-corpuscular effused matters capable of organization.— When Erysipelas has once occurred, both part and patient remain liable to its return, from the application of a comparatively slight cause. — — — In the following pages, I shall treat almost entirely of the simple or Cutaneous variety of Druitt and Miller's Classification.

Erysipelas is generally ushered in with, muscular weakness, headache, pain in the back, and other general febrile symptoms, and sometimes with nausea and vomiting. Very frequently there is soreness of the throat; and another symptom is that of a painful swelling of the lymphatic glands on the cardiac side of, and nearest to the part about to be attacked with inflammation.

The fever which is attendant upon the disease, is either a premonitory symptom, or occurs simultaneously with, or a little after the local disease. As to this especial symptom, its grade, in the outset of the disease is affected by many circumstances — such as the temperament; present state of health as well as the former habit of body of the patient; the presence or absence of deleterious atmospheric influences; the origin of the disease; and the extent of local lesion. In certain cases of vigorous constitution, the fever continues — sometimes in a greatly aggravated form — during the continuance of the cutaneous inflammation; and if there be no asthenic tendency in the disease, it is generally of an open, inflammatory character and offers little cause of ~~the~~ alarm unless the inflammation invades the scalp and occasions cerebral disorder. In other cases, owing

to one or more causes — such as the feeble constitution of the patient; the peculiar depraving nature or malignancy of the cause producing the disease, or the depraved state of health in which the patient was in at the time of attack — the attendant fever is asthenic — either at the commencement, or at some time during the continuance of the malady. The grade of the fever may be asthenic throughout the complaint; or it may become typhoid for the disease has reached its climax — having been grave in character in the beginning; — or it may be of a low asthenic form from initiation to crisis. As the majority of practitioners consider this a disease of marked typhoidity, we are led to look for phenomena of a typhous character; and we have them in the abnormal state of the several functions of the body. Whenever the fever is well marked, we

find that it continues after the eruption but that it usually subsides with the inflammation. In some cases which may be appropriately styled Local Erysipelas or simply Erysipelatous inflammation, resulting from wounds or previous local disorder — there is an absence of fever; and, as in other exanthematous diseases, we may well suppose that the fever of Erysipelas sometimes occurs without the peculiar affection of the skin — the cutaneous inflammation appearing to be superseded by that of one of the internal organs or surfaces.

— — — The Inflammation in Erysipelas is specific and of a peculiar nature. Dr Druitt terms it "An unhealthy inflammation having a disposition to spread widely along the surface of the skin or membranes or in the cellular tissue; liable to attack different parts — either simultaneously

or by metastasis"; and evincing a tendency to gangrene and an indisposition to the exudation of coagulable lymph. It results in the superficial texture, skin and subcutaneous areolar tissue is circumscribed in its extent, generally abrupt in its margin, and definite as to its boundaries. It is then seen to be invading the neighboring healthy parts, assimilating at the original seat. The inflamed part is slightly raised above the neighboring sound parts, and is generally redder than the sound skin, and often shining and hot to the hand. The redness and swelling gradually, and sometimes rapidly, extend themselves; and the inflammation is sometimes so striking, as to obliterate all traces of the natural countenance. The redness is of a rosy hue — vivid scarlet in cases of robust constitutions where the inflammation is of an acute

character - but it is faint and of a yellowish cast when the disease is attended with much debility, and when the local disease affects loose cellular parts such as the Eyelids, Scrotum &c &c in which it occasions considerable serous effusion. In this form of Erysipelas (now being described) the redness disappears momentarily on pressure, the paleness, by compression, being less transient than in Erythema. The pain is stinging, burning, smarting and itching in character; and the elevated inflamed spot is painful and tender to the touch.

The phenomena observed, which stand as objective signs, are certainly those of Inflammation - though the process, in a large number of cases, ceases with the exudation of serum - constituting the first local change or "termination of inflammation" - and ends in complete subsidence or resolution

In fact, it sometimes happens that even the stage of serous Effusion is not reached — the inflammation either gradually rising for three or four days — subsiding without any apparent effusion of any kind. But it more frequently happens that the cutis is elevated about the third or fourth day by a serous liquid, appearing sometimes in the vesicular, sometimes in that of bullæ, from a quarter of an inch to an inch in diameter — which occasionally run together and produce an extensive blistered surface. This vesication occurs either alone or along with the gradual inflammatory effusion, and if thus complicated, the cellular tissue, though originally free, now becomes involved in the morbid process — with an separation of the exudations proportionate to the copiousness and rapidity of the effusion. If it is to resolve, the vesicles burst,

or are artificially emptied; the effusion in the sub-
-cutaneous cellular tissue is absorbed — with an
abatement of the several symptoms — the part
quickly regaining its normal condition by a
process of resolution by vesication (whereas in the
more simple form the Erysipelas resolved by simple
desquamation.) Even in this case, the final term-
-ination is by desquamation, the vesicles beginning
to dry up on the fifth or sixths day — forming
small crusts or scales on the seventh or eighth —
and separating from the newly formed Cuticle about
the tenth, day. — — It is not to be understood that
the inflammatory action always recedes after vesica-
-tion; for there are instances in which the vesicles
burst, the Serum discharged, without simple des-
-iccation following. In such a case we witness a dis-
-charge of Pus — the action having advanced to the

grade of true inflammation (or that of suppuration.) As this more serious variety is often complicated with subcutaneous abscess, it is not improbable to suppose that a similar formation of vesicles, and discharge of Pus, take place on the internal aspect of the Cutis. (It is only when simple Erysipelas has been greatly neglected, or when it occurs with more than the usual intensity, that such abscesses form. But even here, the case is more amenable to treatment than the true Phlegmonoid variety, for the abscess is circumscribed and surrounded by the usual fibrinous deposit. And so, if it be opened by a free incision before the integument loses its vitality and sloughs from having been early undermined and its nutrient vessels strangulated by the intercapillary effused material — and before the limiting fibrinous deposit breaks down

before the ever advancing suppuration — the natural resources of the system alone, or aided by the proper nutritious and stimulant articles, will probably help the patient on to recovery before the setting in of the graver secondary typhoid phenomena). — I have already mentioned that Erysipelas sometimes attacks different parts of the body by Metastasis — the lighter and more simple forms of the disease showing the greater tendency to thus change their seat, the Brain and Heart, and their appendages, are the structures most likely to be seized upon after such rapid subsidence of the external malady. But such alarming symptoms as Delirium and Coma are still more frequently the consequence of an extension of the inflammation to vital parts — whilst the external inflammation continues.

It is this process to observe a peculiar natural law, that insures even the mildest forms of the disease a respectful attention at the hands of physicians.

The Causes of Erysipelas are very numerous — and often very obscure. They are either predisposing or exciting. The exciting causes are those of ordinary inflammation, Obstructed Circulation, and the introducing poisonous fluids into the circulation either by contact, or by inhalation. It is a matter of dispute, as to whether the disease can be communicated by one patient to another. Dr Hosack denies that it is, in itself, contagious; Watson, Erichsen, Druitt, Wilson and others say that the disease is clearly contagious as well as infectious. I think that we can safely say that Erysipelas arises

it in country practice, is not at all contagious.

—— But none of the causes of common inflammation is capable of itself of giving rise to Erysipelas. There must be some other condition to be fulfilled to predispose one to this particular form of disease rather than to others. One cause of this disease appears to consist in a constitutional predisposition — this alone being sometimes sufficient to bring about an attack, without the aid of any other apparent exciting cause, ... the predisposition, instead of being constitutional, is not unfrequently the consequence of disease. Some unknown state of the atmosphere seems to exert a powerful predisposing influence in favor of the occasion of Erysipelas, so that when it exists the slightest causes will give rise to this form of inflammation, as to the conditions affecting the duration

and severity of the disease — the most influential are, the nature of the cause; the tendency (whether it be to serous effusion, or to gangrene;) the condition of the system — whether it be previously in a diseased or healthy state; the nature of surrounding influences; the violence of the inflammation; and the mode of treatment. All these causes affect the prognosis the more when any two of them act simultaneously: thus were the subject a robust young Country man and the exciting cause that of gastric disorder, the Erysipelas would most likely, be asthenic rather than otherwise — and the duration of the disease would probably not exceed 7 days — the convalescence being both rapid and continuous. But were the cause some sinister atmospheric influence, and should the local affection manifest

a tendency to gangrene, the previous healthy condition of the patient; and the most favorable hygienic & dietetic conditions will be most appropriate treatment, would scarcely save him from serious illness and a tedious convalescence. — — — — — Treatment:

The degree of innervation and vascular action, as well as the attendant circumstances of each particular case, must be fully considered before we resort to either the antiphlogistic or Tonic mode of treatment. Though it often happens that an expensive and energetic treatment is indicated by the inflammatory type of the fever, the hard and frequent pulse and the derangement of the nervous function (manifested by headache and active delirium) in the mild and in the acute stage of the disease.

yet it is frequently necessary that we have to adopt this mode of treatment at an early day, and exhibit those remedies that promise to support the strength of the patient, whilst they resist the growing tendency to asthenia. In view of this fact, when we set out on an Antiphlogistic plan of treatment, it becomes of great importance to observe the greatest vigilance, and be prepared to counteract any threatening change that may occur; for the indications of treatment may alter from one hour to another. The stimulant and supporting plan of treatment is fast coming into favor with the profession at large, and some of our distinguished teachers advocate its adoption from the very commencement. It behooves us to remember to what natural group of diseases Erysipelas belongs, that we may

keep in view the necessity of removing all obstructions to the completion of the natural process of elimination — and of encouraging the constitution under its vigorous efforts to restore the disease by this process — as well as under the process of separation by which the affected tissue is restored to a healthy condition.

The remedial measures must of course consist of both general and local measures, the second to the former — these agents should be employed whenever it is to remove all morbid secretions connected with irritation of any part of the alimentary canal. If the patient is seen on the first occurrence of the symptoms — and there be nothing to contraindicate it — the treatment may begin with the exhibition of an emetic.

But this plan of treatment is not universally

adopted — Drs Watson and Wood recommending it in those cases alone, where there is nausea or oppression of the Stomach from the presence of bile or other irritating matter. It seems to me that the three prime indications, (the unloading of the Stomach, promoting the flow of bile, and inducing profuse perspiration of the general surface) require the free dose of Tartar Emetic or Ipecac. — Facts establish this as good practice — although the exceptional cases, in which this mode of treatment may not be employed, may be so numerous as to guard us against its universal adoption. — In all cases it will be proper to purge briskly at the commencement; to this end some recommend Calomel and purgative draughts every seven or eight hours — and

these to be continued as long as they bring away hardened lumps, or dark offensive motions; whilst others prefer neutral salts, or Rhubarb and Magnesia, or, in cases attended with considerable fever the Compound Cathartic pill. In our choice of the individual articles, we are directed by the special indications in each case. We would prefer simple doses of Calomel where there is much irritability of the stomach; and some one of the mercurial preparations where there is torpidity of the liver - or too much biliary matter in the circulation; - Castor oil in cases of intestinal irritation; Magnesia, alone or in combination, in cases showing much acidity; Rhubarb in typhous states of the disease; and the Saline Cathartics during the continuance of active febrile excitement. After the bowels

have been well cleared, it will generally be suffi-
cient to procure one or two passages daily.
The impaired functions of the kidneys and skin
should be restored by means of either the acetate
or Citrate of Potash given with the Bicarbonate
and Nitrous Ether — converted into draughts of
Effervescing Citrate by means of lemon juice.
If there is much red sediment in the urine
a few drops of the liquor potassae may be given
frequently thro' the day in beef tea — and to
this Quinine in solution may be added after
the febrile symptoms have subsided and the urina-
ry secretion has been partially restored. Or grs
xxv of Bicarbonate of Potash may be given three
times a day in water or solution of citric acid; this
treatment by alkalies should not be carried to excess
for by so doing a worse evil would follow, anemia

of leaving a more insoluble salt in the urine.)
In view of the similarity of the blood lesion in Erysipelas and in Acute Rheumatism and Gout, the Acetous Extract of Colchicum in combination with Calomel and Opium, has been recommended in the early stages of this disease. — If the secretions, especially those of the intestinal canal, threaten to remain of a vitiated character, it has been advised to give Hydrarg. cum Cr., as by this combination the obstinate dry tongue and skin, confined bowels and Scanty urine — with other signs of diminished secretion — are overcome. This remedy, or that of Calomel and Dovers Powder, is employed after the subsidence of the acute stage of the disorder; or, when after sufficient depletion, the local symptoms are threatening — tho' without any complication

of gangrene or malignancy. — During the active stage of the fever, attended with much head=ache and with a hard pulse, the cooling dia-phoretics may be administered. The neutral mixture and effervescing draught are excellent preparations — the latter being preferred when the stomach is irritable, and to it one of the prepara=tions of Antimony may be advantageously added when the patient's stomach is not irritable. Dovers pow-der alone or aided by sweet spirits of Nitre, or the Minderer's spirit — and the warm bath if deem-ed advisable — is an excellent remedy when the gen=eral action is feeble at the commencement or at any time during the progress of the disease — and especially when there are well marked ner-vous symptoms (such as restlessness, watchful-ness, and slight delirium.) It would be contra=

=indicated should there be cerebral congestion in
Coma. — — — In the very fewest number
of cases is blood-letting required; but if it be, it may
be extracted from the arm or by cups or leeches when
the patient is young and vigorous, the pulse full
and strong, the face flushed and delirium violent;
or the local action violent — or in case some inter-
=nal organ has been attacked. Should we determine
upon general blood-letting the patient should be sit-
=ting or standing, and the bleeding orifice large,
that the desired effect or approach to fainting
may be produced by the loss of as small a quantity
of blood as possible. There is always some danger in
the use of leeches and the scarificator as the
wounds made may become new foci of disease. —
— — — Should we, whilst pursuing this anti-
phlogistic mode of treatment, see evidences of de-
-bility,

and we should still be uncertain as to the propriety of administering the more stimulant medicines we might derive great benefit from Carbonate of Ammonia, in doses of grs v every five or six hours. We may continue this treatment as long as the disease goes on smoothly; but if there should be evidence of continuous sinking, we would resort to Wine, or to large and repeated doses of Quinine – aided by nutritious food – the stimulation being graduated to the degree of debility. The habits, as well as the age and strength of the patient, should always be taken into account: Thus, the habitual drunkard should be allowed alcoholic stimuli freely – as soon as the system begins to falter, it may be good practice to stimulate him from the very commencement – and at the same time to bleed him, to save the strength and arrest local action. In case of retrocession of

the cutaneous inflammation — if internal inflammation be the cause — bleeding should be resorted to; but it should be tentative, for should the erysipelas be connected with debility it will be necessary to stimulate instead of depleting further.

If the circumstances are such as to urge upon us the adoption of the stimulating and supporting plan, the treatment will consist in the free administration of food and stimulants: such as beef tea, and some form of alcohol — brandy by preference — in repeated quantities at stated and short intervals; and if drugs are needed, Ammonia, Quinine and the mineral acids — exhibited so as to be retained by the Stomach. Alcoholic stimuli are considered by many to be the Antidotes of the Erysipelatous poison, and we hear Dr Todd of London saying [illegible] to be restricted to any one remedy in the treatment

of this disease, I should assuredly, choose brandy".
We are directed to give small doses of the stimulant at first — increasing gradually. The digestive powers of the patient should be closely attended to — that no dyspeptic symptoms may be excited by giving too much at one time, or too great variety of stimulant or food. We can generally tell when we have given too much of the stimulant, by the smell of the patients breath, by his flushed face, and his complaining of sickness and a sense of oppression. In such a case we would reduce the dose and lengthen the interval. — The treatment by large doses of sulphate of Quinia comes well recommended — but wine is generally preferred. — — Sometimes, in the course of this disease, the patient may become delirious, or he may fall into a state of coma. Dr. Wood speaks of this as tho' the Erysipelas has induced

inflammation of the membranes of the Brain; Dr Watson speaks of an extension of the inflammation producing delirium and coma by pressure within the head; and observes that, in some cases, the veins of the Pia Mater were found turgid with blood; Dr Todd denies that the cerebral symptoms are due to inflammation of the cerebral meninges, and cites the fact of post mortem examinations having failed to detect any products of an inflammatory process, or anything amiss with the membranes - except that the vessels of the Pia Mater contained rather less blood than they ought to have had in them. From these data we have an explanation of the difference in the mode of treatment recommended by the several writers. Dr Todd asserts that the stimulating and supporting treatment, adopted in the very beginning of the disease, will prevent both

delirium and Coma. (To be sure, we ought to remem-
-ber that he is of London!) One of his admirers Dr. Da-
-vis of the University of Virginia, says that these symp-
-toms (delirium and Coma) indicate a state of exhaustion
and defective cerebral nutrition, and so demand
the cautious administration of Stimuli — and not
catharsis and bleeding! And further, that alcoholic
stimuli are the antidotes — conjoined with nutri-
-tious food — and with an occasional administration
of the Tinct' of Muriate of Iron. — This Tinct-
-ure of the Sesquichloride of Iron is highly land-
-ed by many in the profession — and, in the opin-
-ion of some practitioners — approaches as near to
a specific as any other remedy in this disease.
Surely the benefit derived from its use, is not
owing alone to its tonic power — nor to the exclusion
of depressing treatment accruing from its use!

It sensibly affects the secretion of the urine, while it restores the healthy nutritive powers of the red blood-globules — and this it does probably, by its power of correcting the particular blood le=sion which belongs to the pathology of Erysip=elas. In the "American Journal of Medical Sci=ences" of July 1858, its efficacy is spoken of in such terms as to court the confidence of the most doubting in the profession. Its power is exerted not only over the progress of the local affection, but also over the duration of the dis=ease; "not only is the progress of the Erysipelas sen=sibly modified from the first few hours which follow the administration of the medicine, but it is completely arrested; the radical cure of the disease is obtained in a very short time". Dr Wood speaks favorably of its influence over the disease.

Dr. Cabell's treatment consists in in giving twenty (20) drops of the Tincture every two hours, until the pulse is reduced to the natural standard. He says- some doubt its efficacy: but I believe the fever is subdued much sooner by its use than it would be without it! I should rely upon this Tincture, and that of Iodine (diluted if the officinal strength is too concentrated.") Dr. Chisolm notices it in these words: "Besides acting as a general Tonic, and also thro' its mineral acid upon the liver-promoting biliary secretion — it affects directly the bloodvessels, producing contraction in their walls, and a diminution of their calibre, relieving congestion, and preventing, to a great extent, effusion". — Its administration is without any advantageous results where the Erysipelas occurs in a young, strong, and robust subject of a

sanguine temperament, and where it is accompa-
nied by a well marked inflammatory action.

The local treatment consists in the application of Tincture of Iodine; or of a strong solution of Nitrate of Silver; or of the watery solution of Opium; or of Dr Cristison's lotion of equal parts of Opium and of Acetate of Lead in four parts of water; or a solution of Sulphate of Iron ℥j to the ℈j of water; or of Tincture of Iron ℥j to ℥iij of water — with which a cloth is saturated and laid over the part. Or some unguent may be applied — such as freshly made Goulard's Ce-
rate, or Zinc ointment, or Collodion 30 parts to Castor Oil 2 parts. Prof. N. R. Smith thinks that greasy applications are generally injurious, but rec-
ommends the Mercurial ointment when the disease is chronic. Some Mucilaginous body, as

glycerin or Slippery Elm poultice may be applied with comfort to the patient. A course of hot flan=nels warmly recommended by Dr Watson, or cotton wadding may be resorted to. The local application of the Tincture of Iodine, was about the only treat=ment during the late war, in the Southern Ar=my and hospitals. (It should be diluted with whiskey or alcohol.) In the erratic cases of Ery=sipelas it has been recommended to apply a powerfully strong solution of nitrate of silver (160 grains to the ounce of water) to the erysipel=atous surface — and for an inch around. It is said to be most efficacious when used just as soon as the disease appears. — Gentle support by means of a roller, is especially indicated in the atonic and oedematous cases. To relieve the congested vessels of the inflamed part or parts —

and to give an exit to the effused matter, punctures with a lancet may be necessary. Should there be a Metastasis to an internal organ, or to a less favorable part, blisters or warm cloths moistened with Spirits of Turpentine, or Spirits of Camphor, may be applied at the original seat of disease — or some favorable part of the body.

Very Respectfully —

Theodore H. Lanck.

Lucas —

AN

Inaugural Dissertation

ON

Sign of Pregnancy

Submitted to the Examination

OF THE

Provost, Regents and Faculty

OF

PHYSIC,

OF THE

UNIVERSITY OF MARYLAND,

FOR THE DEGREE OF

DOCTOR OF MEDICINE,

By

Geo. Boteler

Of

Washington County Maryland

Session of 186[illegible]

It is very [illegible] and [illegible] an [illegible] Horti-

culturist can know plants [illegible] [illegible]

[illegible]. [illegible], [illegible]

[illegible] Expect [illegible], [illegible]

[illegible] issuance of [illegible]

[illegible]. We need say but little as to the

[illegible] Making [illegible] correct diagnosis.

The [illegible], [illegible] the [illegible]

[illegible] [illegible], the

[illegible]

[illegible]

We may be called [illegible]

[illegible] P [illegible]

[illegible]

[illegible] P [illegible]

is [illegible]

[illegible]

[illegible]
[illegible]on in cases where females for
improper purposes wish to leave for [illegible]
[illegible]
design.
[illegible]ever, indeed, are the reasons
[illegible]
[illegible] above subject.-
[illegible]
[illegible]
[illegible] ent & fuller, the
[illegible]
[illegible]
[illegible]
[illegible]
[illegible] taken under such
[illegible]circumstances [illegible]

are exhibited in different women and when [illegible] to distressing [illegible] [illegible] primarily and secondarily. Variations in temper. "May become uncertain, coy and hard to please".

The [illegible] [illegible] altered. The skin may be ch- [illegible]

[illegible]. But in some [illegible], the deviations from the ordinary state are more remarkable, and constitute the special signs [illegible]

upon which our diagnosis is must be grounded; these we will now notice, previously remarking that the diagnosis of early Pregnancy is no easy task, but requires the most careful and minute investigation. One of the first circumstances which leads a female to suspect that she is pregnant, is the non-appearance of the Catamenia at the regular time; and if at the second period this is deemed conclusive, or nearly so. But strictly speaking this is not always the case, inasmuch as the discharge may occur for some months after conception has taken

upon the substance to be examined by the very thin walls of the inferior region of the uterus [illegible] (Cazeaux). This sign is not of much value before the fourth month, and its indication cannot be relied upon before the seventh.

Pulsations of the foetal heart can generally be heard at the beginning of the fourth month. These pulsations are far more frequent than those of the mother's heart, [illegible] from 130 to 160 per minute. They are very often heard in the same [illegible], without any [illegible] [illegible] for the [illegible] of these [illegible] [illegible] [illegible], it is

occupies the whole abdomen.

barrassing, for the uterus itself may be distended by air, fluid or hydatids; when this is the case, the uterus and abdomen assume identically the same shape and position that we have in pregnancy.

Here we have to rely upon the history of the case alone, for our diagnosis. Modifications in the neck of the uterus. In the non gravid state the uterine tissue becomes, the [illegible] in its consistence, and soon after conception this consistence begins to diminish, until [illegible] is [illegible] possible [illegible] [illegible] [illegible] [illegible] [illegible]

gestation the neck is so soft in some
women that it is with great difficul-
ty that we are enabled to distinguis-
h it from the walls of the vagina.
These modifications of the neck
are of the utmost importance;
for it enables the accoucheur
to ascertain the different stages
of pregnancy, this [illegible] constant and
found in all females, unless
the neck should be the seat of
some pathological alteration, this
softening is not generally so well
marked in the primiparæ as in
women who have previously
borne children. From certain
causes with which we are not

familiarly acquainted, it sometimes happens that the ovum, instead of passing into the fimbriated extremity of the fallopian tube, on the bursting of the graafian vesicle, and being thus transferred into the cavity is still in some part of its course, where an effort is made to supply the place of the uterus and afford a nidus and nutrition for the foetus until the [illegible] ultimately [illegible] [illegible]; to this misplaced gestation various names have been given "extra uterine pregnancy" "graviditas extra uterum" &c. [illegible] the varieties of extra uterine pregnancy may be reduced to three, which we will briefly notice. The species of [illegible]

has been subdivided into several varieties which have received different names, according to the part of the passage where the ovule becomes fixed. Tubal Pregnancy. When the arrest of the progress of the ovum takes place at the fimbriated extremity of the Fallopian tube, we frequently find that the ovum forms part of the walls of the sac in which the foetus is contained, though it is not always easy to point out the exact locality of the arrest. But of all the varieties of extra uterine Pregnancy, that where the embryo is contained in the tube itself is the most frequent.

Ovarian Pregnancy. By some this species of extra Uterine Pregnancy is considered doubtful, on account of the facility afforded for the escape of the ovum after the rupture of

the graffian vesicle, Utero-Interstitial Pregnancy. This form is the rarest of the three, It is possible that either congenital malformation or pathological changes may retain the fecondated germ in the ovary or prevent its entrance into the fallopian tube or arrest its progress after its entrance, narrowness or obliteration of the tube may produce this effect. Symptoms. So long as the embryo is lodged and can be accommodated there may be but little [illegible] and nothing to assist in makeing a correct diagnosis. The mammary sympathies are excited, and the changes in the areola (the same as in natural pregnancy) takes place. The increase of the abdomen generally differs from that in ordinary pregnancy being more to one or the other side. The os uteri may be high up or depressed though it generally retains the

position of the [illegible] or nearly so. It is stated by some authors, that the foetus may be retained in this way for a number of years without destroying the mother. Twin Pregnancy. The inadequacy of the signs which are commonly stated to indicate plural Pregnancy, is felt by all, Those however upon which the greatest reliance is placed are the disproportionate size of the abdomen in front, with the appearance of being divided into halves, the irregularity of its surface, the tumultuous movements of the foetuses, the inordinate weight and distortion and the excessive oedema of the lower extremities, but we cannot rely upon these as positive signs for they may arise from other causes. The only sign upon which reliance can be placed, is the hearing of the pulsation of the two foetal

hearts equally distinct and at a distance from each other "Usually the beating of one heart is heard in the left or right inferior abdominal region while that of the other is audible in the superior abdominal region of the opposite side as it never happens that the position of the children are such that the beating of the two hearts is heard over the same place. "It is of great importance to bear in mind the different situations of the two hearts, because their action is often synchronous.

Geo. W. Boleter.

AN

Inaugural Dissertation

ON

The Brain and Nervous System

Submitted to the Examination

OF THE

Provost, Regents and Faculty

OF

PHYSIC,

OF THE

UNIVERSITY OF MARYLAND,

FOR THE DEGREE OF

DOCTOR OF MEDICINE,

By

Henry Day

Of

Virginia

Session of February 1868.

An

Inaugural Essay

On the

Brain and Nervous System

Submitted to the Examination

of the

[illegible]

For the

Degree of Doctor of Medicine,

By

[illegible]

[illegible]

[illegible]

[illegible]

I [illegible] not, at so early a period of life,

[illegible]

[illegible]

[illegible] of science, I feel the want of ex-

-[illegible]

[illegible]

[illegible]

[illegible] with great diffidence and even

reluctance, that in this instance I yield

[illegible] to its laws: the more so, as

there is not in the whole science of Physi-

-ology [illegible]

[illegible] not [illegible]

[illegible] the expectation that I could

[illegible] that I [illegible]

the Nervous System as the subject of my thesis, for on no subject, consid-
-ering its intricacy, have abler talents been more successfully employed. But having during my first course of lectures received [illegible] [illegible] on the subject [illegible] [illegible] [illegible] University of Virginia, and being [illegible] [illegible] [illegible] to the [illegible] [illegible] lectures of Professor Donaldson of the [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible]-ication of the ideas I retain on the subject (though exceedingly superficial) may be acceptable. And while I am sensible [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible]

that are endowed with genius and judgment I hope to claim a share of their indulgence and trust that proper allowance will be made for my [illegible].

I have entitled this essay "The Brain and Nervous System" because I considered it not so comprehensive a [illegible] [illegible] [illegible] [illegible] [illegible] be. My attention therefore will be confined more particularly to the functions of the Brain bringing into notice only such other parts as are necessary to explain [illegible] [illegible] functions and connections of the Brain. An ancient author has said [illegible] [illegible] [illegible] [illegible] [illegible]

[illegible]

[illegible]

[illegible]

of mankind, yet the assertion is no less true when affirmed by the physical [illegible] [illegible] [illegible] whatever direction we may [illegible] is [illegible] gaze, even when merely externally [illegible] [illegible] [illegible] the [illegible] of mankind. In contemplating the different seasons of the year with the changes of scenery which they bring with them — the verdant and fresh [illegible] of spring — the fragrant flowers

[illegible] of
seared leaves and ripened fruit of
autumn — the frozen streams and snow
capped mountains of winter — All these
present nothing so interesting as our[illegible]
selves. The traveller tramping the
[illegible] of the globe, viewing [illegible]
of man's hand and the [illegible]
[illegible] roaring
cataract or beholding the smoking
[illegible]
[illegible]
than all the scenery [illegible] The
philosopher [illegible] into the mys[illegible]
[illegible]tions, amusing himself with the
electric [illegible] with the
[illegible]

upon his own pulse and discovers in current more mysterious than the electric [illegible] fearful than that which the muttering thunder imparts to the [illegible]

No mechanism in the whole universe of God, discoverable to us, is so intricate and complicated as the physical structure of [illegible] to us is exerted in the world so delicate and at the same time so powerful as that which the Nervous System exerts over the whole physical and mental condition of [illegible]. It is to this latter position that we invite your attention and which we propose to consider briefly.

The Nervous System is the principal system of [illegible]

The Brain which is its "Head Centre" is the seat of the mind. Food, digestion, absorption, circulation, respiration, secretion, excretion, decay & nutrition, their function stand in subordination to the important system on the study of which we now [illegible].

It may be truly said that the position of any animal in the scale of life is directly dependent on the degree of development of its nervous system. Whatever the grade of intelligence may be, the degree of development [illegible] is in close correspondence thereto: from the lowest condition in which it is [illegible] making its appearance [illegible] which are scarcely distinguishable from vegetable forms, up to its highest

that [illegible] is the [illegible] [illegible] [illegible],
in man.

From the perineum to the scalp there extends in a wavy direction a chain of bones of which the cranium is the superior expansion. Within the cranium the brain or encephalon is situated and in the centre of this chain there is a canal filled with medullary substance the Spinal cord.

The Brain is classified into four great divisions: the Cerebrum, Cerebellum, Medulla oblongata and pons varolii. Its weight in proportion to the body is [illegible] [illegible] [illegible]. The [illegible] [illegible] oblongata and Spinal cord constitute the aggregate of nervous centres and

is called the cerebro-Spinal axis.

[illegible]

a white and a gray matter. From the lumbar region to the base of the skull it is even and continuous. From the foramen magnum it commences to expand into a lozenge-shaped mass. The gray matter which has hitherto been internal now becomes external and instead of [illegible] is thrown into convolutions or gyri. The white tract of the Spinal [illegible] nerves, of which there are two sets, arising [illegible] and forming different functions, one set

Called [illegible] conveying [illegible] commands from the brain to distant parts, the other set called sensory nerves conveying sensations from without inwards to the brain. Having mentioned the medium through which the brain receives and imparts impressions, we pass over the manner by which [illegible] plished and confine our attention to its functions. The white substance as before mentioned occupies the interior of the mass and constitutes with the ganglia the centres of motion and sensation and the medium of transmission of perception [illegible]. The gray matter [illegible] this is the centre of reason and intellectuality, this sits as a general commanding

his forces [illegible]
[illegible] not a sensation is felt, not a
sound is heard, not an object is seen,
[illegible] a perception experienced without
an action of this substance. Whether
there be some [illegible]
operating upon this we know not, but
so far as our knowledge extends, it is
the manufactory of all our thoughts
and ideas [illegible] of that
faculty which distinguishes mankind
from the brute creation. The cineritious
substance is a collection of cells, while
the white substance is a collection of
minute and distinct tubuli [illegible]
tubuli connect some portion of the body
with the gray material of the brain

and each one has its own function, its own work assigned it and is incapable of doing any thing else of performing any other kind of work. When an impression is made when some portion of the body, knowledge of it is conveyed to the brain through a nerve of sensation and the mind becomes [illegible] of it through the tubuli connected with this nerve. The mind now having recognized that the impression was made [illegible] the power to act through a nerve of motion. There are also nerves of special sensation as the optic, auditory. Thus the mind receives knowledge of light through one set of nerves, of pain through another, while motion to the [illegible] is

given through still another set. There is also another distinct nervous system called the sympathetic which is connected with the brain and proceeds by a double chain of ganglia along the front sides of the [illegible] communicate with each other, each ganglion is reinforced by a motor and a sensitive [illegible] system. The nerves of the sympathetic are distributed to organs over which the voluntary and the will have no immediate control as the kidneys, heart, liver, intestines &c. Having briefly considered the [illegible] and his forces let us now turn our attention to the nervous system by which it [illegible]

with vitality and preserved from injury and thus enabled to give proper direction to his subordinates. In the first place the bony envelopes of the brain is so constituted that it cannot be injured by external means except by very violent blows or by penetrating wounds. This bony heart is composed of two distinct plates with a spongy structure intervening called the diploë. The membranous envelopes of the brain are very dense. The dura mater lines the interior of the bony cavity and dipping down between the hemispheres of the brain is called Falx. Next a web like membrane [illegible] the convolutions and lastly a thin tough membrane immediately inclosing the

brain and dipping down between the con-
-volutions called the pia mater. Thus the
[illegible]
[illegible] of the [illegible] is
protected from external violence and concealed
from that which would destroy its vitality.
In the second place the inquiry arises how
is the brain supplied with nourishment?
with the [illegible] of the [illegible]. It
receives ten times as much blood as any
other part of the body and the base of
the brain receives even twenty times as much.
The uninstructed world suppose that its
proximity to the heart would cause the
blood to come with such [illegible] and
violent [illegible] as to [illegible]
at each pulsation. But the [illegible]

winding course of the vessels prevent this and no organ receives a supply of blood with greater regularity indeed its structure requires that the most perfect equilibrium should be maintained. Its substance is very soft and as might be supposed arteries, veins, capillaries &c. do not shoot through & through and [illegible] [illegible] [illegible] but [illegible] [illegible] [illegible] of the pia mater, a vascular membrane, closely covering the convolutions, the bloodvessels forming loops of anastomoses in the interspaces of the convolutions and distributing [illegible] of [illegible] [illegible] to the gray substance. Having now briefly considered the brain, seen its various connections, the manner in which it is

preserved from injury and supplied with
[illegible] nishment, let us proceed to notice its
[illegible] effects over the corporeal functions, or in
other words its physiological bearing and
[illegible] bearings. It is true as previously stated
that [illegible]
not a [illegible]
act[illegible] of the mind. We cannot move a
[illegible] limb or turn the body without the
[illegible] of our minds. But says the
objector [illegible]
the [illegible]
circulation &c. which go on uninterruptedly
during the hours of the most profound
slumber and physiologists contend that
during this state the mind is perfectly
[illegible]

the mind is inactive during [illegible]
attempt to refute this skepticism by
propounding these questions. Has the spinal
cord no other office than the [illegible]
sensations to and the conveyance of motor
influence from the brain? For what does it
contain gray material identical with that
in which the mind is situated? Manifestly
it is a centre of nervous influence, though
a subordinate one. Again, of what use is it
that so many ganglia are situated along the
[illegible]
that great chain (sympathetic) sent along
the spinal column having connections so
[illegible]
system is but a host of ganglia connected
by nerve fibres? Every ganglia is a nervous

centre per se. The cineritious substance of brain is the chief, that of the Spinal Cord is the next in authority and so on to the most minute ganglion in the body. As to how the action of that compound organ the brain is maintained I do not [illegible] [illegible] But I again propose the question is not the brain the General in Chief? Do not all [illegible] come from his head-quarters viz: the cineritious substance of the brain? The [illegible] blood in the lungs calls for a fresh supply of pure air, the Medulla oblongata which is the medium of connection between the brain & spinal cords [illegible] [illegible]ing to the brain sends back the motion [illegible] and respiration is effected. The

[illegible] receive a fresh supply of [illegible] knowledge of it is then sent to the Spinal cord and this sends back the power to digest it, without asking permission of the brain. But let something go wrong, let the lungs fail to receive their supply of oxygen or let the stomach be the recipient of some substance foreign to digestion and immediately is the mind informed of it. and "Tired nature's sweet restorer" no longer pictures to us the [illegible] scenery and charms us with the [illegible] of [illegible] the sweet embraces of the God of Sleep, while [illegible] visions light up our faces with smiles, but like the scared hare from its downy bed jumps at the sight of the dog, or like the wild deer from the rocky cliff leaps

at the approach of [illegible]
a wake from slumber at a disturbance
of a law of nature
About the cranial nerves I have said
nothing specially [illegible]
and functions, for it would require ten
times as much as I have already written.
The Special functions of the Encephalic
[illegible] have hardly been noticed which of
itself would have afforded sufficient work
for a Thesis. I might mention that the
[illegible]
[illegible] of common sensations, having a peculiar
[illegible] action upon the voluntary movements.
The [illegible] Quadrigemina are the recipients
[illegible] necessary to [illegible] which are
regarded by some [illegible] felt

by means of the optic thalamus. And there is the olfactory, auditory and gustatory ganglia each of which make known their duties and functions by the names they bear. And the cerebellum has been entirely overlooked and as I have extended this much beyond the limits that I first intended I must be brief with its consideration. Of its functions there [illegible] is still much diversity of opinion, some [illegible] it as the seat of sexual desire. While others regard it as [illegible] experiments have proved that the removal of the cerebellum has resulted in a loss of the power of exciting movements reflex, of co-ordination. And now I will conclude

That the University of Maryland may long
continue to flourish is the fervent wish of
[illegible]
[illegible]
[illegible]
[illegible]

AN

Inaugural Dissertation

ON

The Tongue

Submitted to the Examination

OF THE

Provost, Regents and Faculty

OF

PHYSIC,

OF THE

UNIVERSITY OF MARYLAND,

FOR THE DEGREE OF

DOCTOR OF MEDICINE,

By

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Of

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Session of 1867 & 68

The Tongue. Its Anatomy Physiological Functions &c.

No one organ in the whole human economy has so complex and varied functions as that of which we now speak. The chief organ of taste, an important agent in the performance of mastication, deglutition & articulation, it merits not only laborious study at the hands

youthful Student, aspiring to accumulate vast resources of knowledge from the toils of his predecessors, but truly strict attention from those who have penetrated more deeply the perplexing labyrinths of Nature's hidden mysteries.

The Anatomy of the tongue is of peculiar interest. It wedge shaped organ with rounded angles, terminating anteriorly in a blunt point, it extends

from the Hyoides to the incisor teeth; and filling up the interval between the two sides, & body of the lower jaw, it forms with its connections the floor of the mouth. At its base, it is attached by means of fibrina and muscular tissue to the Hyoid bone; by three folds of mucous membrane (the Glosso-Epiglottic ligaments) to the Epiglottis; and by the anterior

& posterior pillars of the fauces to the soft palate & pharynx. —

Its apex, dorsum, & edges are free.

Its inferior surface, partially free, is attached, throughout the greater part of its extent, by mucous membrane reflected from its sides to the inner surface of the gums; and anteriorly a fold of that membrane (the frænum linguæ), & the Genio-Hyo-Glossi muscles complete its connections.

In structure the tongue is composed chiefly of muscular fibres, intermingled with varying quantities of adipose tissue, vessels and nerves. A fibrous septum, at times containing a small cartilage, extends from the base to the apex, and divides it into two symetrical halves. Each of which is composed principally of muscles, which have been termed Extrinsic and Intrinsic, from their positions &

attachments. The former consist of, first, the Genio-Hyo-Glossus which is inserted into the mesial line of the tongue from its apex to its base. The Hyo-Glossus inserted into the side of the tongue between the Stylo-Glossus & Lingualis. The Stylo-Glossus inserted by one division into the sides of the tongue; the other passing inward is lost in its substance. The Palato-Glossus whose fibres spread out inferiorly

on each side of the tongue among the fibres of the Stylo-Glossus. And lastly the Superior Constrictor which arises by a few fibres from the Genio-Hyo-Glossus.

The intrinsic muscles are the Superior, or Lingualis Superficialis, which consists of oblique & longitudinal fibres, extending on the upper surface of the organ from the apex to the base, some of its fibres being inserted into its fibrous covering. The inferior, known

as the Linguales, is a small fasciculus of fibres arising from the Os Hyoides, and Extending the whole length of the tongue to be lost in its apex. The Middle, or Linguales Transversalis, arises from the median fibrous Septum, its fibres passing transversely and vertically outward are inserted into the sides and dorsum of the organ. This muscle is intermixed with a large quantity of adipose tissue, and forms the chief part of the

bulk of the organ.

The entire tongue is inclosed in a layer of submucous fibrous tissue, which affords attachment to muscular fibres. Investing this fibrous layer is a dense mucous membrane continuous at the lips with the skin. That on the dorsum of the organ consists of myriads of fine papillæ, giving it a velvety appearance, and is marked in the centre by a tendinous raphe, the insertion of the vertical fibrous

Septum. On the sides and upper surface, it becomes thin & smooth, and may be traced on either side of the frænum through the Sublingual, Submaxillary & Parotid ducts into their respective Glands. Lining the entire inner surface of the mouth & fauces, it forms in the latter the tonsils and is then continuous with the Gastro-pulmonary mucous membrane. In structure this investing mucous membrane is analogous to the skin. It

consists of a tough cutis, or corium, which supports numerous papillae, & contains the ramifications of the numerous vessels and nerves with which they are supplied, and of an Epithelial Covering.

The papillae are divided into Simple and Compound. The first variety, similar to the cutaneous papillae, are found thinly scattered amongst the Compound forms over the surface of the tongue, and, also, near the

base of this organ where no compound papillae exist. They are deeply buried under the layer of Epithelium, and forming no apparent projection were, on that account, for a long time overlooked,

The Compound papillae, Exceedingly prominent and visible to the naked eye, have been divided into three classes. The Papillae Circumvallatae. Papillae fungiformes & Papillae filiformes,

The papillae circumvallatae, or maximae, of much greater size than the others, are variously estimated at from ten to twenty in number. They are situated at the posterior portion of the dorsum of the tongue in two rows, which uniting at an acute angle form a V-shaped figure, the apex turned in the axis of the tongue. Each papillae of pyramidal form is attached by its apex to the centre of a cup-shaped cavity

which forming around it a fossa gives it the name of Circumvallata. The epithelial coating is smooth and conceals the numerous secondary papillae upon its surface. A deep fissure exists at the angle of union of the two lines to which Morgagni has given the name of Foramen Caecum.

The papillae fungiformes readily distinguished by their large size, rounded eminences and

deep red color, and more numerous than the preceding, and chiefly situated at the sides, and apex of the tongue. They are smaller at their base than summit; studded with simple papillae, and covered by soft epithelium so thin as to allow the color of the blood to be plainly visible.

The papillae filiformes, or conicae, the smallest of the compound papillae, occupy the greater portion

of the tongue in front of the circumvallate, and are also more abundant towards the anterior part. On the surface of these, also, are found numerous secondary papillae, but their epithelium, instead of covering them smoothly as in the others, is arranged in bundles of hairlike processes, giving to them a whitish appearance.

In structure the papillae are like. Composed of a homogeneous

tissue, covered by a thick layer of Epithelium, they contain a plexus of Capillary vessels, and numerous nerves.

Scattered over the surface of the tongue, but more abundant posteriorly between the papillae Circumvallatae and Epiglottica, are found numerous racemose follicles. At the posterior portion of the dorsum of the tongue, along its borders, and beneath its tip, is situated a number of

mucous glands, which open upon its surface.

The epithelial coating of the tongue is of the squamous variety, similar to the epidermis though much thinner, and may be readily seperated entire by maceration, or boiling.

The tongue is supplied with blood by the lingual artery, which, running along its under surface, terminates as the ranine artery, and distributes minute

arteries to the substance of the organ; by the tonsillar branches of the facial; and by branches from the ascending Pharyngeal.

The veins are the lingual, Ranine & Submental which, collecting blood from all parts of the organ, empty into the facial & internal jugular.

The nerves of the tongue are those of taste, common sensation, & motion.

They are three in number viz

Each half. Nose of taste, and
Common Sensation are the
Gustatory branch of the inferior
Maxillary division of the fifth
pair of nerves, which is distributed
to the papillae at the forepart
and sides of the tongue; and
the lingual branch of the
Glosso-pharyngeal distributed to
the circumvallate & mucous
membrane at the sides and
base of the tongue. The motor
nerve is the hypoglossal, which

support the vast muscular

mechanism of the organ.

The anatomy of the tongue

having been duly considered;

we can readily appreciate its

usefulness as a member, and

the variety of actions of which

it is capable.

In mastication it is one

of the prime actors. When

food requiring division, or

chewing, is received into the

mouth, it is at once attacked

by the tongue; and, if it be of moderate consistence, the action of the tongue, pressing it against the roof of the mouth, may alone be sufficient to effect its division. If of firm consistence, the resistance of the jaws and teeth is requisite. The tongue and cheeks, continuously moving, and acting in concert, keep the food in a position suitable for the grinding action of the teeth, which acting with

great power are enabled to freely
Communicate and divide the various
Substances taken as food.
When the mass of food has
been thus triturated and disintegrated
by the teeth, & other agents assisting
in its reduction, it is intimately
mixed with the salivary fluids,
until it has acquired a pasty
consistence throughout. It is
then in a fit condition to be
carried into the stomach. All
the particles being collected in

the form of a cone upon the surface of the tongue, it is forced backward by the movements of that organ into the pharynx, and then carried onward by other forces, constituting the act of swallowing, or deglutition. The act of sucking is performed mainly by the tongue, which, acting as a piston, forms a vacuum in the mouth, thus inviting the entrance of fluids.

"In the production of Articulate sounds the tongue plays an important part. Dr. Carpenter in speaking of Palsy, "The position of the tongue is indeed one of the primary conditions of the variations of sound; for it may easily ascertained that, by peculiar inflexions of this organ, a great diversity of vowel sounds may be produced, the other parts remaining the same." In the production of the pure vowel sounds the tongue

is comparatively quiescent. They being formed in the larynx, and somewhat modified by the form of the aperture through which they pass. But it is different with regard to the consonant sounds, which are produced by interruptions to the voice. Their sounds are greatly influenced by the action & position of the tongue. Some, indeed, being almost produced by it alone. The letter R. for example, is formed by the vibration of the

point of the tongue, a small quantity of air being forced between it and the palate. But it has been proved, I believe satisfactorily, that the loss of the tongue does not necessarily involve incapacity of speech. A case is cited by Dr. Dunglison in which the woman lost her entire tongue with the uvula; but the powers of speech, taste and deglutition remained unimpaired. Other cases, too, are reported in which

portions of the tongue being destroyed by bullets, disease &c, the powers of speech were fully retained.

Next we speak of the tongue as the organ of taste, and here its utility cannot be overestimated. By its careful discrimination and selection, we are at once protected from harmful substances, and supplied with delightful sensations from those materials, which are agreeable and suitable to our natures.

The sense of taste, though existing in the mucous membrane of the soft palate, fauces, and part of the pharynx, is fully developed only in the papillary apparatus of the tongue. Here, too, we find a distinction. It has been successfully demonstrated that the apex, sides, and posterior portion of the tongue possess this sensibility in the highest degree. The nerves administering to the sense of taste are the

Gustatory branch of the inferior maxillary division of the fifth, and the lingual branches of the Glosso-pharyngeal. The impressions made upon the front of the tongue are conveyed by the fifth, those upon the back of the organ by the Glosso-pharyngeal. To procure the taste of any substance, it is necessary that it be brought in actual contact with the mucous membrane of the tongue, and that it be in

a state of solution. In taste only the liquid and soluble portion of our food which penetrating the papillae by Endosmose, and coming in contact with the terminal nervous filiments, excite their sensibility by combining with their substance, the movements of the tongue, not only aid the solution of substances; but by pressure, or friction, upon the surrounding parts greatly

facilitate the imbibition of liquids.

It has long been the

custom to refer to the tongue

as an index of disease, and

though other means of diagnosis

render it unnecessary now to

place the same reliance

upon it as formerly; yet a

careful examination is always

essential, and will generally

reveal something of importance

pertaining to the disease. The

careful observer will notice,

coating, movements, color, & dryness;
and from these are enabled
to judge, to a considerable extent,
of the condition of the digestive
organs; of the nervous system,
and blood; and of the state
of the secretions.

The tongue is liable to various
affections. Tongue-tie, of
which we will first speak,
is a prolongation of the fraenum
linguae, binding the tip of
the organ to the lower jaw.

Treatment - It must be divided with a pair of blunt pointed scissors, Care being taken to cut near the lower jaw, to avoid the lingual artery.

Wounds of the tongue are generally accompanied with great haemorrhage, Treatment - Apply actual cautery, or ligatures. Children often wound the tongue by biting. Dr. Druit recommends to leave them entirely to nature's care.

Glossitis, or inflammation of the tongue, sometimes occurs in the acute form, but generally accompanies ulceration. Treatment— Gargles, purgatives, leeches, incisions, And allow supporting & liquid diet.

Hypertrophy of the tongue often follows inflammation. Treat it by compression, that failing, remove a V shaped piece, and bring the cut surfaces in apposition.

Ulceration of the tongue may proceed from a variety of causes. That proceeding from decayed teeth is best treated by removing the cause, and using Gargles & aperients. Aphthous sores causing ulcers are treated by aperients, tonics, Nitrate of Silver, Chlorate Potassa &c. Cancer & Epithelioma of the tongue greatly resemble each other, and can scarcely be distinguished without the aid of the microscope. The only certain treatment

is early extirpation, Ephemeral ordinary treatment fails with any ulcers, it should be regarded with suspicion, and treated in a similar manner.

AN

Inaugural Dissertation

ON

Pneumonia

Submitted to the Examination

OF THE

Provost, Regents and Faculty

OF

PHYSIC,

OF THE

UNIVERSITY OF MARYLAND,

FOR THE DEGREE OF

DOCTOR OF MEDICINE,

By

Edward H. Holbrook

Of

Princess Anne, Somerset County, Md.

Session of University Maryland, 1867-'68.

Pneumonia.

Pneumonia is the inflamation of the parenchymatous and cellular tissue of the lung. There is a difference of opinion among the profession, in regard to the side most frequently affected. Often the disease is confined to only a part of the lung, and the special locality is said to be the lower portion of the middle, or the upper half of the lower lobe. Both lungs may be involved. This is called double pneumonia.

The disease is very common. It is not restricted to any particular season of the year, but is oftenest met with in winter and spring. Nor is it

limited to any one climate more than another, but is more common in cold climates than in warm. It exempts no age, but attacks, with equal severity, infancy, maturity, and the decline of years.

Children are more subject to bronchial pneumonia, which is comparatively rare in adults. The inflammation in this case occupies distinct spots, surrounded by healthy tissue. These little spots may be distinctly defined, occupying one or several lobules, and abruptly bounded by the interlobular cellular tissue; or they may gradually run into the surrounding parenchyma,

so that their limits cannot be precisely fixed; or, finally, they may run together, and thus form one continuous mass of inflamation, as in the common form of the disease. Of these three forms, the first, it is stated, is less frequent than the other two; and sometimes all are found in the same patient. The disease may be either primary or secondary. Children who are quite young, are liable to secondary pneumonia. It may follow croup, catarrh, bronchitis, whooping cough, and many other ailments.

There are three stages in this disease:- first, engorgement; second, hepatization; third, re-hepatization. In the first stage

the substance of the lung is engorged with blood, or bloody serum. It is of a dark red color externally, and crepitates on moderate pressure like sound lung does. It is heavier than natural, does not float, and retains, in some degree, the impression of the fingers. The engorged portion when cut is found to be red, and a great quantity of a reddish and frothy serum is seen to flow from it. It is easily torn, and from its resemblance to spleen in this respect, it has been termed splenization of the lung. The mucous membrane of the small bronchial ramifications, in this state of engorgement, is of a deep red

color. Notwithstanding the increased specific gravity of the engorged lung, it will float on water.

In the second stage the lung is still red, but does not crepitate under pressure, and sinks in water. "Its cut surface presents sometimes a uniform red color; sometimes a slightly mottled or variegated appearance, produced by intermixture of specks of black matter of the lung, and of the interlobular areolar tissue, which is less red than the other parts, and more than naturally obvious to the sight; but the spongy character of the organ is lost; it is evidently solid; and the cut surface very much resembles the cut

surface of the liver." Hence it is termed hepatization. The red fluid is diminished, and is not foamy. Often there may be found traces of yellow matter at this stage. This is an indication of commencing suppuration. The hepatized lung is more dense and solid, and more friable than before.

In the third stage the lung, dense, solid, and impervious to air, undergoes an alteration in color. It becomes of a reddish yellow, or straw, or drab, or stone color; or it is of a greyish hue, sometimes mottled with red, or with the black pulmonary matter. The granulations, which in the second stage appear red, are now whitish or grey, and

the substance of the lung is still more friable than before. It is full of purulent matter, which is sometimes so abundant that it oozes out plentifully when incisions are made into the lungs; or it may be made to exude by gentle pressure. The gray pus shows itself upon the cut surface in the form of minute drops. The more the pulmonary texture is soaked or drenched with this fluid, the softer and more friable it becomes. When crushed between the fingers and thumb, it is reduced to a yellowish grey pulp, exactly like the fluid itself, only more consistent. And by gently forcing the finger into any part of the parenchyma in this state, a small

cavity may be made which soon fills with pus, and which might readily be mistaken for a recently formed abscess."

Pneumonia is essentially pyretic, and the fever may be either inflamatory or typhous. In malarious regions it may be a complication known as bilious pneumonia, in which the fever exhibits a periodic form, and the other characteristics which mark autumnal remittent. When the pleura is involved it is called pleuro-pneumonia.

Acute inflammation of the lung sometimes results in gangrene. The part which has perished is dark, of a dirty olive, or greenish brown color. The odor is very offensive, and is a distinctive characteristic during life.

The bronchial tubes are generally involved in the inflammation. Bronchitis is a constant attendant on pneumonia, and when very severe, may facilitate the diagnosis of the latter.

The chief cause of pneumonia is exposure to cold, especially moist cold. Sudden changes of temperature, from warm to cold, are apt to bring on severe attacks.

Pneumonia is generally ushered in with a chill, followed by febrile reaction, difficult breathing, cough, and severe pain in back part of the chest. Occasionally it happens that general uneasiness, lassitude, loss of appetite, and more or less fever precede the characteristic symptoms for some days.

Secondary pneumonia may come on without pain, cough, or fever, and can only be distinguished by the hurried respiration, depression of strength, and the physical signs.

The symptoms of the disease are fever, pain, - generally not very acute, but rather oppressive, - quickened pulse, dyspnea, slight cough, with little or no expectoration at first. Pain is aggravated by the cough. The breathing is accelerated and oppressed. Fever and inflamatory symptoms come on together, preceded by a chill. The digestive organs are disordered. The cheeks, one or both, may be flushed. There is generally severe headache; pain under the scapula; urine high colored, and is said to be deficient in

the Chloride of Sodium. In a few days the expectoration becomes free and increased, and the breathing is more easy. The expectoration is gray and tinged with blood, presenting a rusty colored appearance, and hence called the rusty colored sputa. It is very tenacious, adhering to the vessel containing it even when inverted bottom upwards. This is the most important characteristic of the disease. In bad cases the color of the sputa resembles prune juice, which is very unfavorable. Should the inflamation pass on to suppuration, rigors will be experienced, the respiration become more oppressed, not less painful, and a sense of weight will be felt in one of the

pleura.

The physical signs are of great importance. At first there is slight dulness on percussion, usually most perceptible below the point of the scapula, behind or at the side. The vesicular murmur is feeble, and a crepitant rale is heard. As the disease advances the dulness increases, and the rale disappears. The respiration becomes blowing, and bronchophony may be perceived. When purulent matter is expectorated, a mucous rale or gurgling sound may be heard. If a cavity is formed pectoriloquy can be heard. As the patient begins to convalesce the sounds will take a retrograde course, the crepitant rale

preceding the restoration of the natural vesicular murmur.

The average duration of pneumonia is about ten days. In moderate cases the symptoms may speedily subside. But should there be a sudden relapse, dyspnea may become more severe, pulse become small and accelerated, delirium set in, with cold sweats, and result in coma and death. Should it be more favorable, there may be a critical discharge of some kind, tongue begin to clean, dead epithelium matter peel off, and pulse lose its irritability.

Diagnosis.- Diseases with which pneumonia is most apt to be confounded, are

bronchitis, pulmonary oedema, pleurisy, and certain states of phthisis. In bronchitis the sensations are more those of soreness than pain, and seated in the upper and anterior part of the chest. The expectoration may be streaked with blood, but never has the viscid and rusty characters of the sputa of pneumonia, and is much more copious. No true crepitant rale is heard, but dry and mucous rales may be perceived. - There is neither bronchial respiration nor resonance, and very seldom a permanent want of the respiratory murmur in any part of the chest. Nor is there any considerable dullness on percussion. It very often happens that the two diseases are

combined; and when pneumonia is in the center of the lung, or disseminated, it is sometimes difficult, if not impossible, to distinguish between them. But in the majority of cases, by carefully observing the symptoms and physical signs, the diagnosis is rendered comparatively easy.

In oedema of the lungs there is dropsy of the areolar tissue and in other parts; the patient has dyspnea; and crepitation, produced by large bubbles, may be heard only at the lowermost portion of the lungs. Percussion gives a hollow sound. The liquid is from time to time coughed up and expectorated. Sometimes this ejecta or expectoration contains some mucus, and is

somewhat foamy. These symptoms can be easily distinguished from those of pneumonia.

In pleurisy there is sharp pain, dry cough, dyspnea, and dulness on percussion. This, however, is changed by the position of the patient. Respiration is rapid, and there is frothy, mucous expectoration.

In phthisis cough is one of the earliest symptoms, and generally comes on gradually. At first it is slight, occasional, and dry. The expectoration often resembles that of bronchitis. Haemoptysis, hectic fever, night sweats, and diarrhoea, are very characteristic of this disease.

Prognosis.- When primary pneumonia

occurs in persons of strong constitution, and is of the common or lobar kind, and is not complicated with any other disease, the prognosis may generally be considered favorable. But should it occur in old and debilitated persons, or is complicated, it is very unfavorable.

Treatment. — Various have been the opinions in regard to the propriety of bleeding in this disease. Some affirm that it is actually necessary in every case, others that it is injurious in all. Here we are obliged to take a stand between, and treat each case as seems to us to be most rational. Nature herself teaches us that the loss of blood is often beneficial, and

sometimes even necessary to the preservation of life. And shall we refuse to profit from her instructions? Blood-letting is sometimes necessary in the first stage of the disease, when the lung is greatly engorged with blood, and rendering respiration exceedingly difficult. Here the loss of a few ounces of blood will often be found to accomplish much good. Yet it often happens that moderate cases recover speedily when left to themselves; and perhaps, in such cases, bleeding would be productive rather of harm than of good. We are, therefore, obliged to rely upon reason and common sense, to discriminate between those cases in which bloodletting would

prove beneficial, and those in which the use of the cancer wounds be followed by evil consequencies. Pain may often be relieved by the application of cups, drawing a few ounces of blood round the part affected: or a few leeches may be applied. Bloodletting should never be employed in the second stage, or stage of hepatization.

The next to be employed in this disease are remedies which will promote expectoration, and asswiate pain. Perhaps the most important articles we have for the accomplishment of these, are antimony, ipecacuanha, mercury, and opium. Ammonia, syrup of squill, nitrous powder, sweet-spirit nitre, and Dover's powder, may all be found exceedingly useful during the course of the disease. In

advanced stages stimulants may be found necessary; also comp. tinct. ; bark and ether. Blisters may be resorted to, but should not be employed too early, or during high febrile action.

Nourishment should be given from the first, in order to restrain waste as far as possible, and enable the patient to bear up under the oppression of the disease. There cannot be too much said in regard to the propriety of nourishing the sick in every case of disease. It is high time that we should do away with those old theoretical ideas and teachings which would have us believe that starvation is the only rational mode of treating disease. Is it characteristic of a wise and christian man to withhold from a fellow creature, whom we see in a dying state, the requisite of nutrition and life itself? — Can we call him a sane man who supposes that drugs will support life as any more in disease than in health? No! Let such idle theories as these be speedily cast down into the bottomless depths of oblivion, that noble reason reign supreme in all her glory!

AN

Inaugural Dissertation

ON

Dyspepsia,

Submitted to the Examination

OF THE

Provost, Regents and Faculty

OF

PHYSIC,

OF THE

UNIVERSITY OF MARYLAND,

FOR THE DEGREE OF

DOCTOR OF MEDICINE,

By

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Of

Washington County, Maryland.

Session of 1847 & 48.

Dyspepsia.

The signification of this disease is universally understood by all Physicians, as being some evident derangement of the functions of digestion. Of late years, owing to the imperfect ideas we are having learn of the intrinsic value of health, and the happiness it affords mankind to possess, in our civilized world, notwithstanding the intelligence every year brings forth, the prevalence of this malady has been greatly increased. We are told by all our able authors; and skillful practitioners of Physic, that this disease is one of

the serious consequences which necessarily follows
the violation of the laws of health. First we have
to consider the physiological conditions as they
are laid down by our able instructors. Now the
digestion is a process which furnishes nutrition
to all the vital parts of organisms, and by this
process is understood that food should be
taken into the stomach, and masticated and
thoroughly mixed with the saliva. After entering
the stomach it should be subjected to the action
of a pulp formed by a mixture of the supra-
diaphragmatic and gastric secretions called
Chyme: this Chyme would then be transmitted

through the pylorus into the duodenum, and there
meet with the bile pancreatic juice and the mu-
cous of the intestines: after this process the whole
is separated into two parts. the one furnishing
the nutritive principles of food, which is then
prepared to be taken up by the lacteals and
veins, thus by the mucous surface of the intestines
by which means it is conveyed into the blood:
the other is excrementitious portion is carried out
of the body. The gastric juice a fluid peculiar
to the stomach dissolves and transforms the food
by a chemical process which takes place in the
stomach: in the first instance, this fluid oozes

from the intestinal mucous surfaces in small drops
when some solid substance is present in the Stom-
ach, secondly whilst it is always of an acid
character, and thirdly should any influences
disturb the action of the stomach, it is liable
to be excessive or diminished in quantity. In
man the gastric juice contains acids also an al-
buminous principle to which has been given the
name pepsin and also to which it owes its Sol-
vent powers. Food thus having entered the Stomach
is mixed with the gastric juice by a revolving
motion of that organ, and then is slowly changed
into chyme, this also is acid. The chyme is at

finally driven into the duodenum, by the pressure of the muscular fibres which embraces the stomach at the pylorick extremity. The usual time required for the completion of this process varies from two to four hours. Liquids when introduced into the stomach disappear either through the pylorus or by absorption in a much less time. The various changes characteristic of the stomach, and digestion generally, is not done founded upon speculation, but actual observation; we are told that an American physician had for a long time the privilege of examining the stomach of an individual, its movements and condition during the progress of digestion.

Other cases have been recorded in the Medical Journals and text books, which are as prodigious, but its doubtless unnecessary to take a review of them. Having said that in order to promote digestion the food we take into the stomach should be in minute division, or in order to accomplish this have to have undoubted mastication. A dyspeptic stomach in most all instances we believe to act slow, and should any tough particles of food enter the stomach, they pass undigested and often give rise by creating irritation in the whole intestinal track, grave consequences. These undigestible substances not unfrequently undergo spontaneous

changes giving rise to warmth and pain in the stomach, extricating gases, and forming acids, and perhaps the undigested substance may be expelled from the stomach by vomiting, or it may be conveyed into the duodenum and their give rise to excessive irritation and disturbance. These then are some of the most common causes of indigestion; as regards the preventive measures they are obvious enough since our understanding of the natural functions of digestion is so easily comprehended; by all those who have made it a study. There is no evidence to contraindicate the fact that hasty eating is one of the true known

cause of this disease, as it is frequently met with
in those who for want of time in their imagination,
to chew properly their food, swallow it in a manner
unbroken by their teeth. Any substances passing
through the stomach undissolved is conclusive ev-
idence of it not coming in contact with the
gastric juice. Some of these substances are the
husks of seeds, some coloring matter of vegetables
and the seeds of many fruits. These articles
consequently provoke disorder in some part of
the stomach, and often form a nucleus for in-
testinal exertion. Sometimes when there is
great activity of the digestive powers, and

the bowels are slow to move, substances such as brown bread, the indigestible bran and tegument of the kernalas of wheat, excite peristaltic action in the intestines, and inverts in some persons the necessity of direct purgation, Indigestible substances which the pylorus refuses to pass may lay in the stomach for days and even weeks, giving rise at the same time, much functional disorder; in these cases if the cause can be ascertained an emetic will be the best remedy to employ. The changes which are essential for chyme to undergo are divisible into two: first, that which is taken up by the lacteals; secondly, that which is discharged

with the excrementitious portion. The functions of the pancreatic liquor has not exactly been determined, but its supposeable that it has some influence on the absorption of fat: but with regards to the bile our knowledge is somewhat more clear. The acids in the stomach combine in the duodenum with the alkalinity of the bile, and consequently partially neutralize it. Bile being the natural stimulus of the intestines, should its secretion be imperfect or passage into the duodenum prevented, digestion and assimilation may continue, but there is generally a sluggish condition of the bowels. There are other important uses of the hepatic

secretions, but with these we are not at present Concerned. It is evident, that the state of the biliary functions can have no direct influence in producing indigestion; various parts of the body may suffer detriment, when the constituents of the bile is imperfectly eliminated from the blood. When the functions of the stomach and liver are both deranged, it may is that the former organs by indirect sympathy will be disordered with the morbid secretion of the latter; or the same cause may excite derangement of both organs.

Symptoms, Anorexia, or want of appetite, is to be by one of the most common symptoms

of Dyspepsia. This in many instances is the only plausable reason the patient may have to found his belief that he has the disease: and in consequence of such he feels a repugnance at all articles of food, and on going to eat the very sight of food turns his imagined hunger into utter disgust. Many views have been expressed concerning the true meaning of hunger; some have ascribed it to the action of the gastric juice on the empty surface of the stomach; but it seems conclusive that in health the gastric juice is always present, and should the stomach be empty, there would be very little if any - Some writers assert.

that the action of the muscular fibres of the stom-
ach have something to do with the sensation of ap-
petite, but the empty stomach in health being
contracted upon itself, will be satisfactory enough
that this can not be. The nerves doubtless play an
active part in increasing the sensations of hunger,
as we know from the manifest influences of
habit. Despondency will no doubt destroy the
most voracious appetite by acting through the
medium of the nervous system. In some cases of
Dyspepsia where anorexia is only a first symptom, the
disease can often be gotten rid of, by the Em-
ployment of the simple bitters, or universal

acids two or three times a day for a short time.

Nausea and Vomiting. These symptoms often present an the most distressing with which the patient has to contend. Nausea may come on immediately after the patient has swallowed his food; again it may be absent, but in course of two or four hours, all the food taken into the stomach may be expelled by vomiting. The substances evacuated by vomiting may be sour and sometimes mixed with bile, especially if the vomiting should be violent. Then the patient will conclude that he is bilious, but the examining of the liver can nothing to do

with it, the appearance of the bile in the matter vomited proceeds from some inverted Condition of the duodenum. Vomiting is an Evidence of some abnormal irritability of the Stomach, and often baffles the most experienced physician in its treatment. The effervescing drinks prove of high utility sometimes when all other remedies fail. The mineral acids are often given to allay the symptoms, at other times the employment of the alkalies, such as Liquor Potassae Lime water &c are of the utmost importance, In the employment of the bitter remedies, we conclude that the secretion of the Stomach is too acid, and therefore

administer such remedies as tend to neutralize the secretion. Opiate Enemas with plasters of opium to the epigastrium are measures which must be employed in some cases. Also blisters to the same parts often prove of the highest utility. The two special remedies which have of late been so greatly extolled for their virtue in abating sickness, is Hydrocyanic acid and Creasote. The acid may be given alone or in combination with the effervescing-draught and rarely fails to give relief. When there is no inflammation of the stomach Creasote may be given, and often abates the most

intense nausea very speedily. But in considering nausea and vomiting when not dependent upon some other disease of the body, much good may be accomplished by the attention to hygienic regulations. The patient should abstain from eating all articles of food, which are of an indigestible nature, and should pay equal attention as regards the quantity taken at each meal. Flatulence and Belching. The gas that is producing these symptoms arises not unfrequently from undigested substances in the stomach, undergoing fermentation and putrefaction. Change.

This gas may be secreted in the stomach, as flatulence sometimes arises when the stomach is entirely empty; again a delayed meal will give rise to a dyspeptic subject to the same train of symptoms. Flatulence or wind in the stomach as is commonly known, may be abated by various remedies with little difficulty. The aromatics or carminatives such as peppermint water, or Comp: tinct: Cardamom, when it depends upon an over amount of food taken into the stomach.

When it proceeds from emptiness of that organ (the stomach) due regulation for taking

food will suffice to counteract all unpleasant symptoms. When belching supervenes and the vapor exuded has the odour of sulphuretted hydrogen, we infer that some decomposition is taking place in the contents of the stomach. Flatulence then produced by this cause can be abated by some antiseptic agent such as charcoal or Creasote. Should the Eructations be acid ten or twenty grains of the bicarbonate of soda may be taken, but if the ascending wind brings a portion of unmasticated food into

the throat, the most prompt agent we can employ is an Emetic. Omitting the various complications which are so often connected with Dyspepsia, such as Gastrodynia, Cordialgia, and Pyrosis, they being diseases which require for their abatement special treatment, I will now confine myself to the treatment of Dyspepsia proper. The great indispensable principle in the treatment of this affection, is first of all a restriction of diet.

The patient should take for his nourishment articles of food which are most

digestible, and which requires for his sustainment in order to avoid over activity of his digestive functions, as little as possible at each meal. He should also abandon the habit of eating after the stomach has become full, any of the many and contemptible deserts, which substances at the present day have become very popular and fashionable, but unfortunately so, as they bring many a healthy child, and adult, to a premature grave. The stomach like every thing else is endowed with its idiosyncrasies,

and great caution should be insisted upon, that the patient should have a regular time for taking each meal and a regular time for his stomach to digest that meal. With a strict observance of the rules of health, undoubtedly there can be more accomplished as regards its preservation when once impaired, than all the drugs you can administer. When the stomach seems of an inflammatory condition, meals should be forbidden unless they are of the most digestible nature. on

account of their stimulating qualities;
farinaceous substances with good rich
milk in this case is indicated —
I do not assume that animal food
should not be taken by Dyspeptic sub-
jects, as unquestionably when properly
prepared it is far more nutritious than
vegitable, and also less likely to excite
acidity in the stomach; however a
combination of these two substances
when eaten with discretion, are justly
suited for a weak and irritable stomach,
and often are digested without the

modest Exercise resulting. Exercise in the open air; horseback or Carriage exercise, is also beneficial with a Change of scene. Some writers restrict the use of all liquors while others enjoy them in moderation in the treatment of dyspepsia—

When a feeble State of the system exists, which is very Common; since one of the almost importances, and ale, beer, and porter, running would be of service, as they possess the proper tonic properties, As regards the bowels, they may be kept regular with small doses of

Calomel, combined with aloes and rhubarb, or the two latter medicines alone.

Acidity may be corrected with one of the Carbonates, of which I have spoken. This is a disease rarely fatal of itself, though often prostrating, and unquestionably when proper care is observed as regards diet, with the aid of tonics, I do not think any doubt can be apprehended, as to its atalement.

S. C. Troupe.
Wash. Co. Md.

AN

Inaugural Dissertation

ON

Diphtheria

Submitted to the Examination

OF THE

Provost, Regents and Faculty

OF

PHYSIC,

OF THE

UNIVERSITY OF MARYLAND,

FOR THE DEGREE OF

DOCTOR OF MEDICINE,

By

Frank F. England.

Of

Frederick County. Maryland.

Session of University of Md Sixty first 1867 & 8.

Diphtheria

Diphtheria is a constitutional affection deriving its name from one of the local symptoms connected with it — viz. — an inflammation of the throat with a deposit of lymph and formation of false membrane. This affection has prevailed as an Epidemic from a very remote period differing widely as to fatality in the various epidemics and also severity of symptoms. It has been described by writers in different countries and epochs under various names but the name applied to it by Bretonneau is used altogether in this country and it was

he who very clearly elucidated the dis-
-tinctive characters of the disease in the years of 1821, 24 & 25. The disease so common [illegible] to describe. I will divide into Symptoms, Pathological & Anatomical characters, Causation, Diagnosis, Prognosis & Treatment. Nephritis presents in differ-
-ent cases such difference as regards symptoms both local & general, that some writers have instituted several varieties of the disease which is unnecessary as it merely tends to confuse, which most most writers have [illegible]. I may [illegible] being necessary to mention divisions in connection with the symptoms. a marked point of [illegible] [illegible] to the development of the disease. In the [illegible].

severe cases of the disease. It is ushered in by mild febrile movement accompanied by a slight sore throat, the most remarkable feature of the disease is that the depression of the patient is out of proportion to the amount of local disease, an examination of the throat shows a slight degree of swelling & redness not very livid and first confined to the Tonsils. In the course of a few hours, white specks appear on the Tonsil usually on its inner surface, and later then the other Tonsil becomes affected. At the sometimes though not often the deposit appears on the Velum & Uvula. One or two applications of Ch. Iron [illegible] to the parts are sufficient to remove the deposit, or it may disappear spont-

neously, & not be reproduced in two or three days the Patient is pretty well again. The strength is not so quickly [illegible] as would be supposed from the [illegible] of the disease. Then again the disease begins with a chill more or less severe, followed by high febrile movement, but not unfrequently the disease comes on gradually & insidiously. The Patient complaining of indefinite ailment or a feeling of languor & lassitude, there being not symptoms which would point to the throat and the characteristic appearance only being discovered upon an inspection of the throat. The initiatory symptoms have no positive relation to the severity of the disease, or the parts which are to be the seat of exudation. The disease being

properly developed, the symptoms will be divided into local & general, which will correspond to the nature of the affection. The local, referable to the inflammatory congestion of the throat is seldom accompanied with notable pain or soreness. There is a liability in such cases to overlook the disease. Sometimes the sensibility of the part are diminished. Sometimes deglutition is painful at other not so sometimes partial paralysis of the muscles of deglutition take place which will described hereafter as a sequel. It is sometimes a concomitant of the disease in regard swallowing, especially liquids. If the exudation be extensive & line the aspiration sometimes present next to Pharyngeal Sides down, ...

ration, The breath becomes affected with a fœtid [illegible], a symptom of [illegible] the throat and lungs, this sometimes occurs. The false membrane extending over the buccal membrane occasions more or less pain in the introduction of food, Stiffness of the parts involving difficulty in articulating & also taste. The affection of the antrum & nares gives rise to an acid discharge which produces soreness of the upper lip, and in other situations exposed to view on mucous surfaces and on the skin deprived of its cuticle.

The Diphtheritic inflammation gives rise to pain and soreness and a sero-purulent discharge differing

in quantity at different times.
Frequently ichorous & sometimes putrid.
As a general rule ulcerations rarely occur
The gravity of the disease is generally in
proportion to the amount of false mem-
brane. Not that the gravity of the dis-
ease depends upon a local affection;
the latter being the effect, and not the cause
of the former. The symptoms indicating
the disease in the larynx are the
peculiar hoarseness & huskiness of the
voice, croupy cough, fullness of voice
diminution of pitch and sometimes expira-
torious and stridulous respiration peculiar to
the genuinely croupy affection, the process
of breathing taking place as in sp. of
Larynx, it's caused by spasm of the

glottis and swelling of the tissue and thereby may give rise to difficulty of breathing without the larynx being affected. Laryngitis is not to be considered present as long as the voice is not affected. Enfeebled respiratory murmur and lessened [illegible] of breathing with moist Bronchial Râles [illegible] out of proportion to the laryngeal obstruction due to the extension of the disease into the Bronchial tubes. Passing to general symptoms, as before said, would differ widely as regards the constitutional disturbance without regard to the laryngeal affection which is always dangerous. The disease is always mild or severe, in some mild cases the disease is in a manner local, the patient not seeming to be [illegible] and almost not [illegible]

or [illegible] it. But [illegible] the [illegible] is at the outset or during its course. There is a liability of the occurrence of the deposit of ~~[illegible]~~ in a new place and the development of grave symptoms and dangerous sequelae, something similar to Scarlatina. In those cases in which the symptoms are mild throughout, the exudation is confined to the fauces or to some circumscribed spot, the symptoms referable to the various Anatomical characters, viz: Circulatory, Respiratory, Digestive, Cutaneous, Nervous & Urinary [illegible] in detail, the pulse in some cases becoming very frequent in other the acceleration is moderate. In the course of the disease the pulse is sometimes below the normal standard [illegible] being soft and easily compressed denoting weakness of

the Hearts action it is sometimes irregular which [illegible] symptom [illegible] of organic [illegible] the [illegible] existing. Hemorrhage from the Nares and [illegible] frequently occur requiring Surgeon [illegible] — [illegible] tongue [illegible] Hemorrhage in other places. The skin is rarely above the normal temperature [illegible] sometimes below it. [illegible] spots are sometimes observed in connection with Hemorrhage from mucous surfaces. In grave cases the [illegible] the skin presents an [illegible] sometimes when Hemorrhage has not occured when the air passages are affected there is [illegible] or [illegible] [illegible] of the fauces [illegible]. The disease has no eruption peculiar [illegible] they sometimes occur accidentally as rose spots. Erythema [illegible] & Sudamina the symptoms [illegible]

to the Respiratory system are due to the extension in the larynx trachea bronchial tubes. If life is continued sufficiently long the false membranes are ~~[illegible]~~ expectorated generally in patches of considerable size. The desire for food is either notably diminished or lost. Tender pain and difficulty in deglutition. When the mouth is affected there is ~~[illegible]~~ a repugnance for food, so that with children if nourished at all it has to be forcibly administered. Vomiting is a frequent & sometimes dangerous occurrence this and Laryngeal being serious from its causing difficulty in alimentation. Diarrhea sometimes occurs and is rather an unfavorable symptom, the false membrane is thrown off from the oesophagus in vomiting. The mental faculties are not affected

in the majority of cases mild passive delirium sometimes occurs and often it is [illegible]. Coma is of frequent occurrence when it does come on the Prognosis is unfavorable. Convulsions sometimes occur but they are not so unfavorable as coma and are of more common occurrence these symptoms depending sometimes upon Uremic poison. Since the disease has been better understood Albuminuria exists in the majority of cases though it is small in the greatest number and according to its quantity the local symptoms are generally developed it is one of the recent discoveries the Pathology of which is not well understood . has taken place in some cases the duration of this disease (Diphtheria) is from five to fifteen days. It sometimes falls short of this, [illegible]

fatal in two days or it may reach three [illegible] weeks [illegible] in many cases of this affections leaving out the extension of it to the air passages which being peculiar to the disease. The complications are not of frequent occurrence. Pneumonia and the affection of the kidneys causing Albuminuria Urine [illegible] Dropsy are constant complications. Diphtheria occurs in Scarlatina, Measles & Smallpox the disease setting [illegible] one another & then be resumed again after being repeated. The sequel of this affection form an important part of its history. Anemia & general debility remain sometime for a considerable period. Feebleness of the hearts action remain sometimes causing death by syncope paralysis of the heart may take place & also muscles [illegible] [illegible]

and the pharynx contains fluids. The paralysis generally takes place without any [illegible] has begun especially of the Palatine muscles, the most [illegible] the symptoms which are difficulty in deglutition and regurgitation of liquids through the nares. It sometimes becomes necessary to introduce food by means of stomach tubes there being danger in such cases of food getting into the larynx and causing death. The paralysis is sometimes both motor & sensitive, the existence of Paralysis of the Palate is recognized by the nasal intonation of the voice & the [illegible] [illegible] respiration. In some cases the power of swallowing is very small so as to make it difficult to keep sufficient nourishment; [illegible] by its onset in the larynx. Diagnosis in such cases is difficult. The amount of Paralysis

differ greatly as to extent and situation in different cases affecting sometimes the lower & upper limbs Respiratory muscles. The paralysis is gradually developed and is preceded by the tingling of the skin numbness [illegible] the skin. The paralysis in some cases general, sensation as well as motion being lost, the organs of sight smell taste [illegible] the bladder muscles concerned in defication are effected. The paralysis [illegible] to be entirely functional not depending on any discoverable lesion. Recovery may be looked for as a general thing. The Pathology of the Paralysis is not well understood it being in some way peculiarly connected with Diphtheria as it seldom occurs in other affections, "Pathology." The Pathology of Diphtheria being now better understood than it formerly was is known to be a constitutional

affection, The exudation of Lymph is merely the local expression of a morbid condition of the system, this condition supposed to be in the blood. "Causes." The causes of Diphtheria not being well understood the question remaining in some peoples mind unsettled whether the disease is contagious. The French Pathologists deal its contagion and not altogether without foundation, Experimenting upon their person with the exudation from the throat of a person labouring under the disease, But according to other authority equally as well informed upon the subject, the disease is said to be contagious and the case related by Ques Prof. of diseases of Women & Children Proff Howard of Prof Trick of the Institution Univ. of Ind. who died of the disease contracted while perform

Laryngotomy upon a child at the Infirmary
and also by cases related by Doctor McSherry
whose experience is not a limited one, of cases
occurring under his notice, of the disease com-
municated from one patient to another by using
the same articles. Diphtheria seldom occurs
sporadically it is an epidemic, & like other
epidemics has its special causes which are
hard to decide whether they are contagious
virus or an infectious miasm. The point not being
yet settled it is better to be cautious and not
use the same articles. In different cases the
susceptibilities are not equal. At all stages of
life the majority of cases occurring between the
ages of three and ten years. Infants & aged
are liable to be attacked with the malady
Diphtheria as regards its variations resembles other zymotic

"Anatomical Character," In each case its anatom-
ical character, are the same, consisting of redness
and swelling of the [illegible] Tissues,
in a few hours by the exudation of a
white membrane appearing at first in little points
but soon coalescing forming an investment to
the which were formerly inflamed. The white
color of the previous deposit is speedily lost, as
fresh exudations is produced and the membrane
becoming grey or black as the air or blood from
the congested
the mucous surface, The deposit becomes split
up into shred which hanging down at the back
of the fauces produce a gangrenous appearance
of the sloughing tissue, hence the name diphtheria
called gangrenous sore throat. If the membrane
is detatched from the throat a number of little
bloody points appear on the surface [illegible]

the firmness by which the membrane attached. With the exception of the vascularity the parts are little altered, along with this condition of the fauces there is swelling of the sub maxillary glands and to some extent of the parotid, this swelling is rapid in its development and in its disappearance. and never so severe as in Scarlet fever with little tendency to end in abcess and brawny hardness and not that indolent which attends scarlet fever, The soft Palate and Tonsils are first affected, but it don't stop there, it has a tendency to extend to the mouth Larynx Trachea Oesophagus and occasionally to the nares. Affections of the mouth tongue and gums are exceptions to the general rule, The membrane in such places has a very loose attachment, the spontaneous throwing off of the membrane takes place in four

or five days, but it may last two weeks some times they are [illegible] [illegible] [illegible]. The redness extends beyond the exudation. In mild cases the exudation is confined to the fauces but as before said it may extend itself to all parts of the body when the skin is deprived of its cuticle. The most dangerous is the Larynx and Bronchia it sometimes affects the eye destroying sight, by producing opacity of the Cornea. There are no other facts pointing to any other lesion belonging particularly to this affection ascertained, "Diagnosis." Previous to the inflammation and exudation there are no distinctive characters, the local symptoms are preceded by general for a variable period the symptoms are in some cases mild in others acute the diagnosis is sufficiently easy when the local manifestation have

taken place. There is danger in confounding it with other diseases as Membranous croup Scarlatina Pharyngitis Tonsilitis Erysipelas of the fauces Ulcerative Stomatitis from croup by its being purely local lacking the constitutional symptoms and Sequelæ. Diphtheria begins in the fauces has no particular connection with the trachea. In a majority of cases does not affect the trachea while croup begins in the Larynx as its anatomical situation it may extend to the Pharynx. From Scarlatina it is to be distinguished by the latter the poison of which gives rise to a rash which disease has a protective influence against a secondary attack suppuration of the glands of the neck deafness dropsy, sequel of Scarlatina which differ from Diphtheria. The exudation of Scarlet fever being different from that of Diphtheria it is pultaceous

put extent has not lendency to spread to the respi-
ratory organs [illegible], a sign
of the former and a concomitant [illegible]
in simple Pharyngitis the mass of mucus deposit
on the fauces can be easily removed and can then
be distinguished from Tonsilitis. it is distinguish-
ed by little yellowish or white spots appearing
on the surface of the Tonsils at the opening of
the follicles which are contained in the Tonsils
in "Erysipelatous of fauces the deglutition is
difficult at the outset is not attended with the
exudation & enlargement of the glands of the neck.
"Prognosis," The variations as regards mortality
differ in the various epidemics. Authors present
different statistics due partly to confounding
other diseases with it. Mortality being in some cases
large in others small death may take place

from various causes, as from blood poisoning from invasion of the Larynx. from exhaustion aggravated by difficulty in deglutition from uremic uremic convulsions sudden syncope caused by feebleness of Heart action and by inanition, the danger is greatest from invasion of the Larynx and other portions of the air passage being very unfavorable, Aphonia either causes or contributes to the fatal results when ever the Larynx is affected. Next in danger is Asthenia or exhaustion the violence of the disease may destroy life in forty eight hours in the majority of cases in which the disease proves fatal from Asthenia the powers of life are gradually exhausted death taking place generally in second week even when the Larynx is unaffected it is dangerous when it affects the anterior or posterior Nares, Other unfavorable

symptoms are frequent vomiting Diarrhoea copious Epistaxis & Hemorrhage in other situations feebleness irregularity of pulse, coldness of surface abundance of Albumen in urine convulsions delirium & Coma the suddenness of fatal syncope should be borne in mind & the patient should not be allowed to get out of bed as it aids in bringing on an attack of syncope it being caused by heart clots, the Paralytic symptoms do not generally involve danger. Treatment The treatment consists of both local & constitutional corresponding in this respect to the disease the disease being constitutional with violent local symptoms the Constitutional treatment consists of Tonic Stimulants with plenty of good nourishing diet, the Yr of the Chloride of Ferri has proven to be almost a specific in this complaint by giving doses of XXV or XXX gtts every four or six hours. The chloride of Potash

has [illegible] the remedies are used both constitutionally & Locally. The Emetics that are required should not be of the depressing kind. Alum [illegible] recommended by [illegible] teaspoonful given to a child three four or five years of age" Ipecac is another which serves a good purpose as it tends to act as an expectorant the Turpeth mineral will produce Emesis when other things have failed. Mustard is a good stimulating Emetic. The Sulphate of Copper in doses from gr ß to gr iii is a safe and sure Emetic. Of the local applications the the Tr Chloride of Iron either diluted or undiluted is one among the best. Chlorate of Potash is an excellent remedy it has a tendency to break up the false membrane which is our object in the treatment. A gargle of the Nit of Silver is used.

is used by some to [illegible] the same effect [illegible]
mixed with a little Glycerine applied with a hair pencil
to the cracks of the fauces. a solution of Chlorate of
Soda ℨ ss to ℥vj of aqua used as a gargle afford
a great deal of benefit [illegible]
[illegible] the Patient [illegible]
In all cases relief of pain is [illegible]
The Hyposulphite of Soda is an excellent remedy
from its power of destroying Parasytes. The Tur-
pentine already spoken of is a good disinfectant
Creasote & Carbolic Acid also serve the same purpose
for the affection of the [illegible] from [illegible]
Nit. of Silver to ℥i of water. Injected into the nostril
cleanse the discharge it would be well at first
to cleanse it out with warm water and then apply
the other remedies. The remedies for the removal of the
false membrane [illegible]

for its is one of the causes of death. For this various remedies are used one of the best according to Dr Allen P. Smith is the inhalation of Turpentine it having proved successful in his hands in numerous cases. It is applied ~~with hot water~~ [illegible] into vessel filled with hot water heated with a spirit lamp. Lime and the vapor from hot water are also good applications. The swellings of the Parotid & Sub maxilary glands are to be relieved by cold applications if the Patient is not to weak or warm, fomentations. Small pieces of Ice used in the mouth and allowed to melt there [illegible] comfort and relief to the Patient; If he is not in too debilitated a condition to allow it for a local application the Iodide of Bromine gtt ij to ʒj. Mucilage [illegible]

The chlorate or nitrate of Potash is an excellent local application. If the patient is costive at the outset a little sulphate of Magnesia and the spiced syrup of Rhubarb should be given, we have also to treat symptoms as they arise or the expectant treatment as it is called one of the improvements of modern Medicine. Stimulants such as wine Brandy and the various Alchoholic should be used throughout the disease good nourishing diet should be given regularly such as Beef tea Broths Soups milk or cream. and every precaution used so as to sustain the patient though he should not be over fed as it tends to do more harm than good. a warm & moist atmosphere should be kept for the patient to breath if possible and they should not be allowed to get out of bed as death is produced by syncope & Heart clots from this cause.

AN

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ON

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By

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It is proposed in this essay not to consider so much the mere changes that occur in the ovum in the progress of its development to the condition of the foetus at term, as to note the various functions these changes make necessary, or by which they are brought about, and, perhaps, to compare them with the analogous functions of Atmospheric life.

To avoid a necessity for descriptions of the female generative organs, and the mu

maturation of the ovum in, and its expulsion from the Graafian vesicle, and much kindred matter that may be found graphically described in most of the text books on Obstetrics and Physiology, it is well to state at this time that the starting point of this essay is the impregnated ovum, fairly lodged in the uterus.

Almost the first result of a consideration of the phenomena of foetal development is their arrangement into two great classes; the formative processes and the nutritive functions, or, in equally expressive terms; vital and vegetative phenomena

The formative processes might themselves be arranged into two classes; the creation of new tissues and the formation of permanent

organs on the one hand and the development, on the other, of auxiliary organs which having played their role are afterwards lost sight of entirely or have their characters so far modified as to be no longer recognizable in the new functions they assume.

Two notable instances of the latter class are to be found in the umbilical Vesicle which entirely disappears, and the umbilical arteries which close up after birth and act as mere ligaments. But perhaps the most striking instance is found in the Urinary bladder an organ whose entire use in the adult is as a receptacle into which is collected effete poisonous excrementitious matters, for the greater convenience of voiding them at convenient interval, but which, when

first formed and as the Allantois for a time the principal means of receiving nutriment.

Proceeding then with only the Vitellus, a structureless mass of albuminous matter, and its membrane, equally structureless. the verry first change simple though it be in its character, is at once so far incomprehensible as to its proximate cause and its mode of accomplishment that we can only confess our ignorance by terming it a vital phenomenon: it is the segmentation or cleavage, or in plain English the subdivision of the whole mass of the vitellus into a granular mass proceeding in a regular geometrical progression, with the ratio of Two. This simple as it may seem is unaccounted for by any known physical law, and is at the same time

as we shall see, the real and only truly creative step. In such a term may be used, in the whole process.

Several ends are accomplished by this. In the first place the new arrangement of the contents of the vitelline envelope demands its enlargement to accommodate the increase in size, while, there being no new matter added, a vacuum results between the granules, which is shortly filled by the absorption of the albuminous secretion which surrounded the ovum during its passage through the Fallopian Tubes and which has by this time become liquified this being the first mode of nutriment and at the same time a provision for a sort of interstitial circulation. The second advance

in organization, is that the granules, which according to "Dalton," have by this time been converted into true animal cells, become adherent to each other, and are flattened out against the vitelline membrane and each other, into the polygonal shape of epithelial cells, which they are in reality, and from which under the name of "Blastodermic Membrane," all the various organs of the future animal are constructed,

By simple absorption from the tissues surrounding it, and which belong to the mother, the size of the ovum is increased, and the blastodermic membrane is further developed into two layers an inner and an outer one, the inner or mucous layer, being the one from which are produced the intestinal canal

and all the organs of vegetative life; and the outer or serous layer, the cells of which are more and more compact contributing to ... all the organs of animal life, or the life of external relation

The "rough draft" as it were, of the future being is formed from these two membranes by such simple processes as mere thickenings and infoldings, much as potters or glassblowers form the shapes of the various hollow vessels that seem sometimes to arise like magic work out of the shapeless mass with which the beginning is made. This comparison will hold however only so far as the mere shape is concerned, much of the ... of the different organs, tissues & ... entirely unknown to us and the rest

to be considered as we proceed.

Thus far all we have seen has been purely formative, the nutriment or increase even, taking place in accordance with a purely physical law, i.e. osmosis. But the stage of development is now such that another mode must at least be provided for, pending the time when its use becomes a necessity.

In the Embryo of such of the lower orders of animals whose offspring are placed at once in the element or atmosphere they are to occupy for the future, it is sufficient that the remains of the vitellus should be inclosed in the body of the new being, whence it is taken up as needed, the development being so great by the time it is completed,

crowned that the animal can then "make its own living", but with mammals it is different the degree of development necessary to their independent existence being so great and so slowly reached that the rudiments appear only in a slight proportion at this time, the animals at birth being many times greater than the ovum, the maternal structure is therefore called on to contribute further to its growth.

About the time the intestinal canal has begun to be formed, and when the amniotic sac is also being completed a new process appears to spring out from the newly formed intestine near the caudal extremity, and which soon gives evidence of vascularity. This is the Allantois, in the beginning a mere process which grows rapidly, assuming first the shape of an umbrella, and finally like a pear

enveloping the whole contents of the vitelline membrane sending vascular branches through it into the actual structure of the mother, where they are shortly bathed in a flow of her blood and from which they thence proceed take up all the nutriment the foetus is to require or which is at all required for its development

Previous to the establishment of this the foeto-placental circulation another and simpler circulation, known as the "vitelline circulation" is formed which is at first simply venous and which is only required to absorb the remainder of the albuminous fluid contained in the embryonic sack for assimilation. Before a great

while, however simple absorption is not sufficient, and minute arteries spring anastomosing giving off branches in all directions, and connecting finally with the veins which principally run parallel with the long diameter of the embryo, a continuous current is established and the circulatory apparatus goes on to develop until four principal vessels appear which are called "Omphalo-mesenteric" arteries and veins. These four are finally replaced by two trunks, one arterial and the other venous. This is the point at which the second circulation begins. From the two finally developed trunks of the "vitelline & Umbilical circulation are developed the "Mesenteric"

vessels from which sprouts, as it were the sausage like process which, taking its name from its earliest shape is called the "Allantois", and from which as was previously said, the placental circulation is finally formed

As soon as the mere absorbent powers of the capillary tubes of the first circulation prove insufficient, or even before in order that it may be ready when needed, a propulsive organ is supplied which by final development becomes the "Heart" This is at first merely a portion of the original tube, becoming twisted and finally by a septum, divided into two portions, corresponding to the right

and left heart of more advanced de-
-velopment.

It would be of great interest
to follow the circulation through its
entire development as it would indeed
be to follow any organ or set of organs, but
it is not proposed here to do so, but ra-
ther to consider its functions and compare
them at different periods.

Before the formation of the
[illegible] there appears to be no function or
process that could possibly involve waste
& increment occurring through the operation of
[illegible] physical laws. the vital phenomena
of development seeming to involve merely
a change of the form of the materials, and
not at all a consumption of them. But

simultaneous with the first pulsation waste is produced, involving as a necessity repair, and thus two functions are at once inaugurated. The actual waste is perhaps very slight, but the motion of the pulsation must either produce friction, which would be incompatible with the ease essential to the function or as is the case a lubricating fluid must be secreted to prevent it, which involves an actual destruction of tissue, as all true secretion do. This then is a third function established, and which, like the other two must continue throughout the life of the animal

This secretion is continually re-absorbed to make room for a fresh supp-

ply, and together with the waste of muscular substance before alluded to must be excreted from the organism, - making a fourth function essential,

A considerable amount, - perhaps the larger proportion, of this waste matter is in a gaseous form and as such passes through the placental circulation to the maternal and is there eliminated by the respiratory process. a function entirely unknown in the foetal economy, except in its widest sense, i.e. an interchange and exchange of gases, for which purposes the placenta serves the foetus instead of lungs, but which differs in many respects from the atmospheric

respiration of extrauterine life, not the least of which is the fact that through the placenta the foetus not only gives off its waste gases in exchange for oxygen but depends upon it for those supplies of aliment it must afterwards receive through the Chylo-poietic organs.

It is also more than probable that fluids are exchanged as well as gases between the foetal circulation and through this channel the foetus gives off waste matter as well as it receives nutriment by the same means but it is equally certain that other functions of the waste of the foetus are carried out of the body by excretory organs peculiar to

the age of existence. Such organs are the "Wolfian Bodies". These bodies are similar in their intimate structure to the Kidneys and are fully developed in the human subject about the end of the first month. The ducts of these bodies empty into that part of the allantois which afterwards becomes the urinary bladder, whence the fluid they convey is probably thrown out into the cavity of the Amnion. As development progresses and the Kidneys are formed these bodies gradually disappear and the more permanent organs take up their proper office which they ever after continue.

That the Kidneys are really active

during foetal life is sufficient, [illegible] by the existence of urinary calculi in new-born infants and of such size and structure as would require some considerable time for their development

We have seen waste and repair established at a comparatively early period but it is clear to a[illegible] that in the very nature of things these functions are comparatively insignificant in amount, the great and paramount phenomenon being growth, and the developement of the organs necessary to the future functions of the animal, in the new conditions of existence it must one day find itself.

The functions thus far noticed are but few. Muscular Contraction

as found in the propulsive organ of the circulation, or the circulation as a whole; secretion; excretion and assimilation, these are the only essentials to this period of life. Nutriment is furnished, digested completely, ready for immediate assimilation, and in the form of living blood, carrying its oxygen with it, dispensing at once with lungs, brain, organs of prehension and locomotion and in fact all those organs — whose office is applied to external relation, and the maintenance of life. The mother now supplies the place of all these and continues for some time to do so, in part even after birth, But active preparations

are being incessantly made to supply
their place and to fit the newly formed being for active and useful existence in an independent state

The first independent function is that of respiration, and accordingly we find the lungs, the organs assigned to that office being early developed as a part of the circulation, pulmonary branches being among those first sent off from the circulation after the development of the heart itself.

The lungs, however, are not fully developed until after birth, some days being necessary, their office being in part performed by the skin, which, in fact, always assists, but not

to so great an extent as immediately after birth, when its condition is peculiar, and remains so for about six weeks.

The next function required by the neonatus is digestion, and this is completely provided for, as far as its requirements demand at birth although many accessary organs are in a rudimentary condition for some time subsequent to that epoch. The first trace of digestive organs is in the inner layer of the blastodermic membrane itself, which, being closed on all sides, forms a cavity which finally becomes elongated into a tube. This tube, then, is the sanguiferous

system, by such simple processes as incurvation, dilatation constriction and the like, becomes finally the whole alimentary canal, including mouth pharynx, oesophagus, stomach and intestines, large and small, which in process of development became connected with the vascular system, and thus is provided a receptacle for food, and a means of digesting it in such quantities, and of such kinds as have been prepared for it at the time of the infant's birth, and of which the mother is still the proper source of supply.

These organs are however very delicate, and widely different from what they are destined to become as life advances,

All the organs essential to the life of the infant are found equal in development to the functions demanded of them. Thus the stomach and intestines are duly capable of digesting milk, the proper pabulum of an infant, and which in all normal cases, is supplied. This substance, contains every assimilative principle, and in such form as to be most easily assimilated, and by the feeblest organism it, in fact closely resembles the blood itself containing rather more water, much more fatty matter, and much less albumen, while sugar also appears in considerably greater quantities.

It will thus be seen that an infants natural food requires but little change of any kind to be converted into blood, or actual tissue, which appears to be an actual necessity to meet the constant demands created by the rapid growth in every organ.

As the child increases in size its organs also become stronger and capable of dealing with a more refractory diet, while the demands of its economy far exceed the mothers ability to supply. This exigency is provided for in the development and eruption of the teeth, the germs of which, both deciduous and permanent are to be found in the foetus at term.

These organs, the hardest of the body the enamel being much harder than many kinds of stone are developed from one of the softest structures, - the mucous membrane, and by a process the various steps of which vie in simplicity with any of those already alluded to. A mere groove is formed, which, while it deepens into a sort of matrix, sends from the bottom little conical elevations, over which it finally closes, the papillae forming the pulp of the future tooth, and finally developing thereto by mere deposites of the tooth-substance from within and without, In the same way.

the permanent teeth are formed, and the process begins at almost the same time, so that at birth the rudiments of two sets of teeth are to be found in each jaw.

At the birth of a child every organ can be found, although it may not be required to exercise its proper function for many years, and it is therefore in a rudimentary condition lying dormant as it were until it is required, when it immediately asserts itself, perhaps much to the surprise of its possessor. A single instance of this will suffice to show the fact, and a more remarkable evidence of perfect provision for the future con-

is found than is afforded by the Ovary of a female at birth, which is found to contain a considerable number of Graafian follicles, in various stages of development, each containing its ovum the germ of a future being.

The Liver has not yet been considered, and requires some circumspection, as it has furnished matter for dispute among medical men for ages.

It is considered as settled that one at least, of its most important offices is the secretion of Sugar, which, being converted into Lactic Acid decomposes the Carbonates, setting free Carbonic acid which is exhaled by the Lungs, the resulting Lactates being carried off in

[illegible] and excreted from the blood by the kidneys. This function is therefore essential in foetal life, as soon as a process of waste begins. Accordingly we find that before the Liver is sufficiently developed. Sugar is found in the Placenta,

The Liver a birth is said to be three or four per cent of the weight of the whole body, which would sufficiently indicate its importance,

Bile, although bile may have been secreted before birth it could not be required in any considerable quantity as its office is merely to facilitate the absorption of fatty emulsions, which must at most be wanting until digestion has begun, the

fore the only functions of the liver in the foetus are the secretion of such portion of Cholesterin, which must also be small and the glycogenic function

Much dispute was at one time had among Anatomists and Physiologists as to the mode of communication between the vascular systems of the mother and the foetus, some asserting that the Capillaries of the one emptied directly in the other and that the mothers heart propelled arterial blood into the circulation of the foetus, while the foetal heart returned venous blood into the structures of the mother

An experiment of Prof. Harris of Philadelphia went far to disprove

this idea. He injected the two systems, the uterine and the foetal in the case of a woman who died undelivered. — throwing in on one side Plaster of Paris suspended in a solution of some proto salt of Iron, and on the other side he threw in a solution of Prussiate of Potassa. After allowing time for the plaster to become hard he made his examination by careful dissection, expecting very reasonably to find the usual reaction and the formation of Prussian blue, wherever the two solutions had come in contact but in no instance was it to be seen although the most careful examination was made by himself and friends.

To meet the possible objection

that the particles of [illegible] were too large to pass. He repeated the experiment with dye injections, coloring the one side blue and the other yellow, but, except where the microscope threw a rupture of the minute vessels, no trace of the green color that would have resulted in a mixture of the two could be detected. He therefore pronounced against the idea of a direct communication, and the researches of subsequent experimenters have shown the accuracy of his conclusions.

Much light in fact has been thrown on almost every physiological function by the advance of modern science, while much more remains yet to be explained. To us who have benefited

by the researches of others, it appears as easy to understand the transmission of nutrient matter through the capillary walls in the extremities of the general circulation or the absorption of digested food by the villi and follicles of the intestines while to earlier enquirers, who had not alone their own ignorance to contend — against, but also the dogmas of their predecessors, it must have appeared no more than reasonable, that, as the foetus required blood for its nourishment and growth, and they saw the blood of the mother meeting that of the foetus in near close proximity in the Placenta they should conclude there was a free and direct communication between them,

Osmosis, and the law of the Diffusion of gases explain much to us at the present day, but while the nourishment of the foetus in utero, is becoming daily better understood, it seems to be still the same problem, only wearing another form, for while we may learnedly inter lard our discourse with such high-sounding words as those above, we are still in ignorance of their limits in many cases, as well as of the conditions under which they most readily take place,

Perhaps the one thing most thoroughly taught by Human Physiology is the existence and direct interposition of a great First cause and in no portion of it is that

great truth more certainly manifested than in that part which relates to Reproduction or the Physiology of the Foetus

The general resemblance in functions attributes and appearance of all the individuals of a genus which is continually perpetuated in their offspring, the identity of the processes by which the various organs and finally the whole being are brought into existence from sheer nothingness, the subservience and actual dependence of each individual process function or organ upon every other, at once impress the Student with the incontrovertible evidence of design and set at naught the theories however ingenious and elaborate of those who would ascribe everything to Chance in the

beginning, and to a sort of Inertia in the continuance, through which we are intended to understand, that, the Universe and its living inhabitants, having sprung into existence by an accident continue to exist merely by force of habit.

It is perhaps the most singular fact of all that those who advance and endeavor to maintain such wild theories are in most other subjects the most astute, reasoners and well in calculating the turn of a dice or the fall of a card, take that most exact of sciences. Mathematics, and calculate by its aid, with the utmost precision the probabilities of any possible occurance, and term it somewhat paradoxically it is true, the Law of Chances.

Now an application of the rules deduced from this law to some of the physiological processes would give some curious results.

For instance: let us take a fresh egg and place it under a willing hen. Now, according to all human means of reasoning on chances, no accident is likely to occur twice in succession, no matter how nearly alike, or even identical the surroundings. But we shall find that our egg will in all probability be hatched and that, if hatched, it will most certainly produce a bird similar in all respects to the pair which produced it and if it fail to be hatched in one case a frequent repetition of the experiment will show

the failure to be the exception and not the rule.

Chance alone governed the matter failure would occur at least as often as success, but as the successful hatching of Eggs occurs so frequently that it can be counted on as an almost absolute certainty, it would appear to be more than mere accident

It has been urged by some of the advocates of the doctrine of Chance even now, that incubation occurs according to the law of chance, stating that law to be that similar circumstances produce similar occurrences and the circumstances are made similar whenever eggs are set under a hen, Now if it were always the same

kind of bird with the same kind of
eggs this similarity might be admitted
but there are few farmers wives, who do not
resort to the expedient of making one kind
of fowl hatch out the eggs of another,
only taking care to keep the eggs under
a sitting bird a sufficient time which
in some cases may involve a delay of at
least two birds, This is certainly some-
-what of a dissimilarity, But sheep which
bear ample fleeces when kept in cold
climates, and on the mountainside
become almost nude when removed to
warmer regions for the prospect of
more abundant food and better
protection

Another difficulty to explain

appears in vicarious functioning, as when the skin, the lungs or the bowels or all of them, take up the duties of the Kidneys when through disease they are unable to perform those duties

Considering the many functions essential to the continuance of life and health, the numerous organs among which those functions are distributed and the perfect harmony and cooperation necessary between all parts of the body, to prevent pain, disorder, death and dissolution, as well as the trifling causes which are known at times to be sufficient to produce disturbance and derangement of the organism, hardly

the most enthusiastic of its advocates would feel comfortable in committing his life health and happiness to so unstable a warden as the law of chance

Created out of a mere nothing brought into a state of physical perfection man has been gifted with an intellect which reaches alike through time and space. He has been enabled by his superior development to conquer all other creatures inhabiting his world and compel them to contribute, even with their lives to his comfort and happiness, and to minister to his wills

He has wrought his way through mountains and even oceans dug into the bowels of the earth and wrested therefrom treas-

-ures and materials to aid him in
his pursuits and compelled the very
wildest and most erratic of nature
forces to do his bidding, and act as
his most willing and efficient
servants - Truly he has been
"fearfully and wonderfully made"
and deep and lasting should be
his feelings of gratitude and, reven-
ence for the many benefits he has
so largely received from his Creator

Plurisy.

Plurisy is an inflammation of the membrain which incloses the lungs. This membrain pours out a coagulable lymph of pus or of blood. The alterations that take place in the Plura proper, is not very great, although often appears to be thicker owing to the false membrain that has formed. It neither gets thicke or ulcerates during inflammation. When the lymph is first formed it is of a grayish white color resembling paste. The effusion will some times

increase rapidly. In children it increases much faster than in adults, and faster still in those suffering from anaemic or scrofulous condition. As to the thickness of the false membrain it will vary to a great extent according to the amount of inflamation that produced it. Sometimes in the absence of adhesion this disease is entirely over looked, although the patients will have some perceptible pain but not enough to call for medical assistince and will get well

worth out any treatment or any interference of suppuration afterwards. By the pleura becoming inflamed and the false membrain pouring out fluid will distend the sack so as to disarrange the position of the heart, liver, and Splen. Causation. Pleurisy is caused by taking acute cold. By Bright's Disease of the kidneys, and any Septic poisons coming in contact with this membrain. It is also caused by machanical injuries, such as a sharp instrument being

plunged in to the side. Ribs
being broken so as to leave
sharp jagged ends piercing
the pleura often causes this
trouble. S. & symtoms. One of
the most characteristic symp-
toms of this disease pleurisy,
is pain in the side, called
by some writers "stich in
the side" It is felt more
distinctly near the nipple,
and it much more lancinat-
ing when a long inspiration
is taken. Pulse is quick,
and may run to one hund-
red & twenty, some what cord-
ed to the finger. Respiration

hurried and jerking in its nature. Temperature will not run very high, may run as high as 101 ½. Pt has cough with a great deal of restraint owing to the pain produced or increased by it. Some cases will appear with slight pain and not much bother as to respiration and will feel as well, or nearly so, as ever. Such cases as these might be called pleurisy of a sub-acute form. On auscultation the air will enter the lung in a sawing form, at the same

time it enters cavity. This will be heard in the first stage. Will be some dullness on percussion. By ausculation the dry friction sound is heard. It is said to produce the same sound as when a lock of hair is rubed between the fingers near the ear. In a more advanced staged there will be flatness on percussion as flat as when you strike on a board. This is when the percussion strokes are made over fluid contained in the sack. Friction sound has disappeared when

there is flatness on percussion
Absence of respiratory murmur
also. That is if the quantity
of fluid is great, if not there
will be exagerated resonance
at the apex of the lung.
If resolution sets in at this
time the fluid will disappear
The friction rale will
return, also resonance on
percussion. But if this stage
goes on in a lingering way
the face will become pale
and a general hectic look
will accompany the patient
with some dyspnoea. Pleurisy
in this stage will resemble

pneumonia, but there will be no expectoration of the true kind seen in pneumonia. Diagnosis. It is by ascultation we get our greatest knowledge of the first stage The friction rale is heard in inspiration and expiration. In pneumonia the rale which is heard is at the end of inspiration or just at the beginning of expiration. In pleurisy there will be flatness on percussion, in pneumonia dullness, and absence of vocal resonance in pleurisy. Interstical

Pneumonia may some times be taken for this disease Frictions sounds are not heard in this form of pneumonia. Mither is there any effusion in the pleural sack.

Prognosis. It is as a general thing very good. In some cases the lungs will expand as well as did before. But if there be an adhesion of the pleura the lungs are apt to be wonder. And again unless resolution sits in the fluid may become purulent in character sitting up hectic fever. The fluid might extend the pleura

so as to burst it and its fluid escaping in to the peritoneum setting up an inflammation of that Membrain. If Medical aid could be gotten this state of affairs should never occur.
Treatment. As to form of treatment My opinion is in many cases they need but little or no drugs nothing more than to allay pain and to produce sleep or rest. A patient should be kept in bed at the same time having the room well ventilated so as to give plenty

of fresh air so as to be comfortable not letting any draught blow directly on him. The administration of opium says Prof. Chew acts well in the first stage. The dose of this drug should be regulated according to the pain. Sul Quinine from 5 to 10 grains three times daily is the best agent to reduce the tumperature. Good nutricious foods should always be given. If fluids exist much in quantity a flat blister will do a great deal of good, and should only be

aspirated when there is fluid
in the sack. The size of the
blister should not be larger
than four by six inches, and
should be placed directly over
the seat of pain. But if in
your mind you are ful certain
that the fluid can not be
absorbed, it would be best to
withdraw it with an aspirator,
and especially if there is much
obstruction to respiration. If
the fluid is only on one side
and extends up to one half
the measure of the sternum,
you should waite as long as
one month without interfearing.

But if there is much dyspnea as I have stated before, it would be best to draw it off with the aspirator. And to do this the patient should place both arms across his breath. The needle should be introduced a little back of the axilary line between the fifth and sixth ribs. It should always be introduced where the greatest dullness is found, at the same time let it be as low as necessary to procure a good drainage. Care should be taken and not prick the lung with the needle, if there

be absolute dullness there will be no danger of wounding the lung. Saline treatment in this stage such as Sul magnesia will cause watery discharges and had a tendency to draw this watery effusion out of the pleural cavity. And this is My idea says Prof. Donalson as to the treatment for pleurisy unless machanical means has to be resorted to. In performing the aspiration with the aspirator great care should be taken not to let any air get in the pleural cavity and owing to this fact a small needle

should be preferred to a large one. After the needle has been withdrawn the hole should be closed up air tight by placing over it a small piece of adhesive plaster. It is not necessary to give an anisthetic even to a child when you operate. By taking a small piece of ice and dipping it in salt and placing it directly on the spot if you wish to insert the needle will benumb the part so as not to give hardly any pain. The patient ought to have eaten a meal easily digested before operation. Always

have some stimulents by your side when you go to aspirate such as ammonia so as to revive the patient if any thing like sinking under the aspiration should occur. As to Purulent Pleurisy all of the fluid should be drawn off at once. Use drainage tubes, also wash out the pleural cavity with a solution containing the Corosive Chloride of Mercury or of Carbolic Acid. After all the treatment of which I have spoken of has been tried and fail to accomplish a cure. The last but not

last of the three different methods I will speake of next and that is the excision of two or more ribs so as to let the chest walls contract and by using the drainage tube to get rid of the pus may accomplish a cure after others have failed.

(End)

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